

Organometallic Standards for AA, ICP, DCP & XRF Analysis

Wear Metals



These Standards were formulated for the analysis of metals in oils and other organic matrices. These Standards and curves provide a convenient way to analyze for metals (wear metals, additives and contaminants) in lubricating oils, gasolines, residual oils, crude oils, turbine fuels and environmental samples.

All standards undergo rigorous quality assurance checks. Major constituents in the final Standard are typically analyzed by both plasma emission and rotrode techniques.

Organometallic Standards listed on this page may contain sulfur which can be introduced by possible sulfonate starting materials used to formulate the actual organometallic standard.

AccuStandard has developed a New Premium Organometallic line for those clients preferring to have organometallic standards with <1 ppm sulfur or phosphorous (see Table of Contents).

- Single & Multi Element Standards
- Prepared Calibration Curves
- Formulated from Ultra High Purity Organometallic Starting materials & matrices
- Comprehensive Certificate of Analysis

Organometallic Wear Metals

21 Wear Metal Multi-Element Standard			12 Wear Metal Multi-Element Standard		
Conc. (µg/g)	Cat. No.	Cat. No.	Conc. (µg/g)	Cat. No.	Cat. No.
10	WM-21-1X-4	WM-21-1X-8	10	WM-12-1X-4	WM-12-1X-8
30	WM-21-3X-4	WM-21-3X-8	30	WM-12-3X-4	WM-12-3X-8
50	WM-21-5X-4	WM-21-5X-8	50	WM-12-5X-4	WM-12-5X-8
100	WM-21-10X-4	WM-21-10X-8	100	WM-12-10X-4	WM-12-10X-8
300	WM-21-30X-4	WM-21-30X-8	300	WM-12-30X-4	WM-12-30X-8
500	WM-21-50X-4	WM-21-50X-8	500	WM-12-50X-4	WM-12-50X-8
900	WM-21-90X-4	WM-21-90X-8	900	WM-12-90X-4	WM-12-90X-8
WM-21-SET-4 set of above 7 x 4 oz.		WM-21-SET-8 set of above 7 x 8 oz.	WM-12-SET-4 set of above 7 x 4 oz.		WM-12-SET-8 set of above 7 x 8 oz.
Each Wear Metal Standard contains the below list of 21 elements in hydrocarbon oil at the stated concentration Ag (Silver) Cr (Chromium) Mo (Molybdenum) Si (Silicon) Al (Aluminum) Cu (Copper) Na (Sodium) Sn (Tin) B (Boron) Fe (Iron) Ni (Nickel) Ti (Titanium) Ba (Barium) Mg (Magnesium) P (Phosphorus) V (Vanadium) Ca (Calcium) Mn (Manganese) Pb (Lead) Zn (Zinc) Cd (Cadmium)			Each Wear Metal Standard contains the below list of 12 elements in hydrocarbon oil at the stated concentration Ag (Silver) Fe (Iron) Pb (Lead) Al (Aluminum) Mg (Magnesium) Si (Silicon) Cr (Chromium) Na (Sodium) Sn (Tin) Cu (Copper) Ni (Nickel) Ti (Titanium)		

Organometallic Wear Metals Single Elements

Element	Organometallic AA @ 1000 µg/g in hydrocarbon oil 100 mL	Organometallic ICP/XRF @ 1000 µg/g in 20 cSt base oil 2 oz. bottle	Organometallic ICP/XRF @ 5000 µg/g in 75 cSt base oil 2 oz. bottle
	Cat. No.	Cat. No.	Cat. No.
Aluminum	WM-AA-01	WM-20CST-01	WM-75CST-01-5X
Antimony	WM-AA-02	WM-20CST-02	WM-75CST-02-5X
Arsenic	-----	WM-20CST-03	-----
Barium	WM-AA-04	WM-20CST-04	WM-75CST-04-5X
Bismuth	-----	WM-20CST-06	WM-75CST-06-5X
Boron	WM-AA-07	WM-20CST-07	WM-75CST-07-5X
Cadmium	WM-AA-08	WM-20CST-08	WM-75CST-08-5X
Calcium	WM-AA-09	WM-20CST-09	WM-75CST-09-5X
Chromium	WM-AA-13	WM-20CST-13	WM-75CST-13-5X
Cobalt	WM-AA-14	-----	-----
Copper	WM-AA-15	WM-20CST-15	WM-75CST-15-5X
Iron	WM-AA-27	WM-20CST-27	WM-75CST-27-5X
Lead	WM-AA-29	WM-20CST-29	WM-75CST-29-5X
Lithium	WM-AA-30	WM-20CST-30	WM-75CST-30-5X
Magnesium	WM-AA-32	WM-20CST-32	WM-75CST-32-5X
Manganese	WM-AA-33	WM-20CST-33	WM-75CST-33-5X
Mercury	-----	WM-20CST-34	-----
Molybdenum	WM-AA-35	WM-20CST-35	WM-75CST-35-5X
Nickel	WM-AA-37	WM-20CST-37	WM-75CST-37-5X
Phosphorous	WM-AA-41	WM-20CST-41	WM-75CST-41-5X
Potassium	WM-AA-43	WM-20CST-43	WM-75CST-43-5X
Scandium	-----	WM-20CST-50	-----
Silicon	WM-AA-52	WM-20CST-52	WM-75CST-52-5X
Silver	WM-AA-53	WM-20CST-53	WM-75CST-53-5X
Sodium	WM-AA-54	WM-20CST-54	WM-75CST-54-5X
Strontium	WM-AA-55	WM-20CST-55	-----
Thallium	-----	WM-20CST-60	-----
Tin	WM-AA-63	WM-20CST-63	WM-75CST-63-5X
Titanium	WM-AA-64	WM-20CST-64	WM-75CST-64-5X
Vanadium	WM-AA-67	WM-20CST-67	WM-75CST-67-5X
Zinc	WM-AA-70	WM-20CST-70	WM-75CST-70-5X
Zirconium	-----	WM-20CST-71	WM-75CST-71-5X

Matrix Oil & Stabilizer

Desc.	Cat. No.	
75 cSt Oil	MOSOL-75-16	16 oz.
20 cSt Oil	MOSOL-20-16	16 oz.

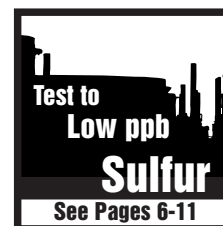
Stabilizer

IS-7281-20Z 1 x 2 oz.

Metals Additives Standards

MA-900-4 4 oz.
MA-900-8 8 oz.

Ba, Ca, Mg, P and Zn at 900 µg/g each in Hydrocarbon oil



ORGANOMETALLIC



Organometallic Standards

Premium Sulfur-Free

These highly concentrated stabilized solutions can be used for customer specific formulations of additive elements in lubricating oils, iron, nickel and vanadium in residual oil, and wear metals in oils. These organometallic solutions can also be used to prepare single element or multi-element standards for plasma emission (ICP or DCP), rotating disk (rotrode), or atomic absorption spectroscopy (AA). The starting materials for the standards are PURE REAGENTS and have been certified against NIST SRM's whenever available. **THEY DO NOT CONTAIN PHOSPHORUS OR SULFUR. TRACE IMPURITIES ARE DOCUMENTED ON THE CERTIFICATE OF ANALYSIS.**

- Highly Concentrated Liquid Organo-Metallic Standards
- Sulfur/Phosphorous free (< 1 ppm)
- Stabilized
- Ready for Use

Organometallic Single-Element Concentrates

Element	Conc. (Wt. %)	Cat. No.	
		25 grams	50 grams
Aluminum	3	WM-NMS-01-30X-25G	WM-NMS-01-30X-50G
Barium	12.5	WM-NMS-04-125X-25G	WM-NMS-04-125X-50G
Boron	2.5	WM-NMS-07-25X-25G	WM-NMS-07-25X-50G
Cadmium	10	WM-NMS-08-100X-25G	WM-NMS-08-100X-50G
Calcium	5	WM-NMS-09-50X-25G	WM-NMS-09-50X-50G
Chromium	2.5	WM-NMS-13-25X-25G	WM-NMS-13-25X-50G
Cobalt	7.5	WM-NMS-14-75X-25G	WM-NMS-14-75X-50G
Copper	6	WM-NMS-15-60X-25G	WM-NMS-15-60X-50G
Iron	4	WM-NMS-27-40X-25G	WM-NMS-27-40X-50G
Lead	20	WM-NMS-29-200X-25G	WM-NMS-29-200X-50G
Magnesium	3	WM-NMS-32-30X-25G	WM-NMS-32-30X-50G
Manganese	7.5	WM-NMS-33-75X-25G	WM-NMS-33-75X-50G
Molybdenum	5	WM-NMS-35-50X-25G	WM-NMS-35-50X-50G
Nickel	5	WM-NMS-37-50X-25G	WM-NMS-37-50X-50G
Phosphorus	5	WM-NMS-41-50X-25G	WM-NMS-41-50X-50G
Praseodymium	3	WM-NMS-44-30X-25G	WM-NMS-44-30X-50G
Selenium	3.5	WM-NMS-51-35X-25G	WM-NMS-51-35X-50G
Strontium	10	WM-NMS-55-100X-25G	WM-NMS-55-100X-50G
Thallium	5	WM-NMS-60-50X-25G	WM-NMS-60-50X-50G
Titanium	5	WM-NMS-64-50X-25G	WM-NMS-64-50X-50G
Vanadium	2	WM-NMS-67-20X-25G	WM-NMS-67-20X-50G
Zinc	6	WM-NMS-70-60X-25G	WM-NMS-70-60X-50G
Zirconium	5	WM-NMS-71-50X-25G	WM-NMS-71-50X-50G

Premium
Sulfur-Free

Sulfur below
detection limits

Organometallic Single-Element Stock Standards

Element	Sulfur free Organometallic @ 1000 µg/g		Sulfur free Organometallic @ 5000 µg/g	
	Cat. No.	50 mL	Cat. No.	50 mL
Aluminum	WM-NMS-01		WM-NMS-01-5X	
Antimony	WM-NMS-02		WM-NMS-02-5X	
Barium	WM-NMS-04		WM-NMS-04-5X	
Cadmium	WM-NMS-08		WM-NMS-08-5X	
Calcium	WM-NMS-09		WM-NMS-09-5X	
Chromium	WM-NMS-13		WM-NMS-13-5X	
Cobalt	WM-NMS-14		WM-NMS-14-5X	
Copper	WM-NMS-15		WM-NMS-15-5X	
Iron	WM-NMS-27		WM-NMS-27-5X	
Lead	WM-NMS-29		WM-NMS-29-5X	
Magnesium	WM-NMS-32		WM-NMS-32-5X	
Manganese	WM-NMS-33		WM-NMS-33-5X	
Molybdenum	WM-NMS-35		WM-NMS-35-5X	
Nickel	WM-NMS-37		WM-NMS-37-5X	
Phosphorous	WM-NMS-41		WM-NMS-41-5X	
Potassium	WM-NMS-43		WM-NMS-43-5X	
Selenium	WM-NMS-51		WM-NMS-51-5X	
Silicon	WM-NMS-52		WM-NMS-52-5X	
Sodium	WM-NMS-54		WM-NMS-54-5X	
Strontium	WM-NMS-55		WM-NMS-55-5X	
Thallium	WM-NMS-60		WM-NMS-60-5X	
Tin	WM-NMS-63		WM-NMS-63-5X	
Titanium	WM-NMS-64		WM-NMS-64-5X	
Vanadium	WM-NMS-67		WM-NMS-67-5X	
Yttrium	WM-NMS-68		WM-NMS-68-5X	
Zinc	WM-NMS-70		WM-NMS-70-5X	
Zirconium	WM-NMS-71		WM-NMS-71-5X	

Technical Note

These standards are **sulfur free** (below detection limits) **organometallic standards** for X-ray Fluorescence (XRF), plasma emission (ICP or DCP), rotating disk (rotrode), or atomic absorption (AA). They are stabilized for blending together with other Analytes to prepare multi-element standards.

Stabilization Solutions

The solutions were specifically designed for chelating and solubilizing the organometallic line of solids and solutions for single and multi-element standards.

Stabilizer Solutions A

ASTM-P-0122-0.5 50 mL
ASTM-P-0122-1 100 mL

Stabilizer Solutions B

ASTM-P-0123-0.5 50 mL
ASTM-P-0123-1 100 mL
(use in conjunction with stabilizer solution A)

Organometallic Standards

Premium Sulfur-Free

Wear Metals



Wear Metals Multi-Element

11 Wear Metal Multi-Element Standard Containing No Metallic Sulfonates

Conc. (µg/g)	Cat. No.	
10	WM-11-NMS-1X-1	
30	WM-11-NMS-3X-1	
50	WM-11-NMS-5X-1	
100	WM-11-NMS-10X-1	
300	WM-11-NMS-30X-1	
500	WM-11-NMS-50X-1	
900	WM-11-NMS-90X-1	

WM-11-NMS-SET-1
set of above 7 x 100 mL

Each Wear Metal Standard contains 11 elements in hydrocarbon oil at the stated concentration

Al (Aluminum)	Ni (Nickel)
Cr (Chromium)	Pb (Lead)
Cu (Copper)	Si (Silicon)
Fe (Iron)	Sn (Tin)
Mg (Magnesium)	Ti (Titanium)
Na (Sodium)	

12 Wear Metal Multi-Element Standard Containing No Metallic Sulfonates

Conc. (µg/g)	Cat. No.	
10	WM-12-NMS-1X-1	
30	WM-12-NMS-3X-1	
50	WM-12-NMS-5X-1	
100	WM-12-NMS-10X-1	
300	WM-12-NMS-30X-1	
500	WM-12-NMS-50X-1	

WM-12-NMS-SET-1
set of above 6 x 100 mL

Each Wear Metal Standard contains 12 elements in hydrocarbon oil at the stated concentration

Ag (Silver)	Na (Sodium)
Al (Aluminum)	Ni (Nickel)
Cr (Chromium)	Pb (Lead)
Cu (Copper)	Si (Silicon)
Fe (Iron)	Sn (Tin)
Mg (Magnesium)	Ti (Titanium)

20 Wear Metal Multi-Element Standard Containing No Metallic Sulfonates

Conc. (µg/g)	Cat. No.	
10	WM-20-NMS-1X-1	
30	WM-20-NMS-3X-1	
50	WM-20-NMS-5X-1	
100	WM-20-NMS-10X-1	
300	WM-20-NMS-30X-1	
500	WM-20-NMS-50X-1	
900	WM-20-NMS-90X-1	

WM-20-NMS-SET-1
set of above 7 x 100 mL

Each Wear Metal Standard contains 20 elements in hydrocarbon oil at the stated concentration

Al (Aluminum)	Mo (Molybdenum)
B (Boron)	Na (Sodium)
Ba (Barium)	Ni (Nickel)
Ca (Calcium)	P (Phosphorus)
Cd (Cadmium)	Pb (Lead)
Cr (Chromium)	Si (Silicon)
Cu (Copper)	Sn (Tin)
Fe (Iron)	Ti (Titanium)
Mg (Magnesium)	V (Vanadium)
Mn (Manganese)	Zn (Zinc)

21 Wear Metal Multi-Element Standard Containing No Metallic Sulfonates

Conc. (µg/g)	Cat. No.	
10	WM-21-NMS-1X-1	
30	WM-21-NMS-3X-1	
50	WM-21-NMS-5X-1	
100	WM-21-NMS-10X-1	
300	WM-21-NMS-30X-1	
500	WM-21-NMS-50X-1	

WM-21-NMS-SET-1
set of above 6 x 100 mL

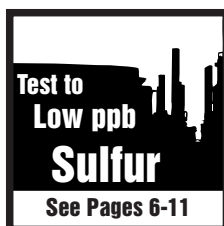
Each Wear Metal Standard contains 21 elements in hydrocarbon oil at the stated concentration

Ag (Silver)	Mo (Molybdenum)
Al (Aluminum)	Na (Sodium)
B (Boron)	Ni (Nickel)
Ba (Barium)	P (Phosphorus)
Ca (Calcium)	Pb (Lead)
Cd (Cadmium)	Si (Silicon)
Cr (Chromium)	Sn (Tin)
Cu (Copper)	Ti (Titanium)
Fe (Iron)	V (Vanadium)
Mg (Magnesium)	Zn (Zinc)
Mn (Manganese)	

ORGANOMETALLIC

Premium Sulfur-Free

Sulfur below detection limits





Organometallic Standards

for AA, ICP, DCP & XRF Analysis

Technical Note

Concentration for the sets on pages 62-65 are targets. Actual production lots may vary.

Sulfur & Metals in Oil

Sulfur and Metals in Mineral Oil ASTM-P-0100-SET 12 x 100 mL					Sulfur and Metals in Residual Fuel Oil ASTM-P-0101-SET 12 x 100 mL				
Cat. No.	Sulfur Conc. (Wt. %)	Nickel Conc. (µg/g)	Vanadium Conc. (µg/g)	100 mL	Cat. No.	Sulfur Conc. (Wt. %)	Nickel Conc. (µg/g)	Vanadium Conc. (µg/g)	100 mL
ASTM-P-0100-01	0.00	0	0		ASTM-P-0101-01	0.00	0	0	
ASTM-P-0100-02	0.50	10	500		ASTM-P-0101-02	0.50	10	500	
ASTM-P-0100-03	1.00	100	25		ASTM-P-0101-03	1.00	100	25	
ASTM-P-0100-04	1.50	80	250		ASTM-P-0101-04	1.50	80	250	
ASTM-P-0100-05	2.00	40	100		ASTM-P-0101-05	2.00	40	100	
ASTM-P-0100-06	2.50	5	400		ASTM-P-0101-06	2.50	5	400	
ASTM-P-0100-07	3.00	60	300		ASTM-P-0101-07	3.00	60	300	
ASTM-P-0100-08	3.50	0	200		ASTM-P-0101-08	3.50	0	200	
ASTM-P-0100-09	4.00	100	0		ASTM-P-0101-09	4.00	100	0	
ASTM-P-0100-10	4.50	50	250		ASTM-P-0101-10	4.50	50	250	
ASTM-P-0100-11	5.00	20	500		ASTM-P-0101-11	5.00	20	500	
ASTM-P-0100-12	5.50	100	50		ASTM-P-0101-12	5.50	100	50	

Sulfur and Metals in Mineral Oil

Designed for ASTM D-5708-95a

ASTM-P-0102-SET 12 x 100 mL					
Cat. No.	Sulfur Conc. (Wt. %)	Iron Conc. (µg/g)	Nickel Conc. (µg/g)	Vanadium Conc. (µg/g)	100 mL
ASTM-P-0102-01	0.00	0	0	0	
ASTM-P-0102-02	0.50	300	10	500	
ASTM-P-0102-03	1.00	500	100	25	
ASTM-P-0102-04	----	100	80	250	
ASTM-P-0102-05	2.00	200	40	100	
ASTM-P-0102-06	2.50	400	5	400	
ASTM-P-0102-07	3.00	0	60	300	
ASTM-P-0102-08	3.50	500	0	200	
ASTM-P-0102-09	----	100	100	0	
ASTM-P-0102-10	4.50	300	50	250	
ASTM-P-0102-11	5.00	200	20	500	
ASTM-P-0102-12	5.50	50	100	50	

Sulfur and Metals in Residual Fuel Oil

Designed for ASTM D-5708-95a

ASTM-P-0103-SET 12 x 100 mL					
Cat. No.	Sulfur Conc. (Wt. %)	Iron Conc. (µg/g)	Nickel Conc. (µg/g)	Vanadium Conc. (µg/g)	100 mL
ASTM-P-0103-01	0.00	0	0	0	
ASTM-P-0103-02	0.50	300	10	500	
ASTM-P-0103-03	1.00	500	100	25	
ASTM-P-0103-04	----	100	80	250	
ASTM-P-0103-05	2.00	200	40	100	
ASTM-P-0103-06	2.50	400	5	400	
ASTM-P-0103-07	3.00	0	60	300	
ASTM-P-0103-08	3.50	500	0	200	
ASTM-P-0103-09	----	100	100	0	
ASTM-P-0103-10	4.50	300	50	250	
ASTM-P-0103-11	5.00	200	20	500	
ASTM-P-0103-12	5.50	50	100	50	

ORGANOMETALLIC

ISO/CD 14597

Vanadium and Nickel Standards with Manganese Internal Standard for ISO/CD 14597

Vanadium Standards - Low Range for ISO/CD 14597 with 0.05% Manganese Internal Standard in Xylene-Mineral Oil

ASTM-P-0104-SET 9 x 100 mL

Vanadium Standards - High Range for ISO/CD 14597 with 0.05% Manganese Internal Standard in Xylene-Mineral Oil

ASTM-P-0105-SET 7 x 100 mL

Nickel Standards for ISO/CD 14597 with 0.05% Manganese Internal Standard in Xylene-Mineral Oil

ASTM-P-0106-SET 7 x 100 mL

Cat. No.	Vanadium Conc. (Wt.%)	100 mL	Cat. No.	Vanadium Conc. (Wt.%)	100 mL	Cat. No.	Nickel Conc. (Wt.%)	100 mL
ASTM-P-0104-01	0.0005		ASTM-P-0105-01	0.0000		ASTM-P-0106-01	0.0000	
ASTM-P-0104-02	0.0025		ASTM-P-0105-02	0.0300		ASTM-P-0106-02	0.0005	
ASTM-P-0104-03	0.0050		ASTM-P-0105-03	0.0400		ASTM-P-0106-03	0.0010	
ASTM-P-0104-04	0.0075		ASTM-P-0105-04	0.0500		ASTM-P-0106-04	0.0025	
ASTM-P-0104-05	0.0100		ASTM-P-0105-05	0.0600		ASTM-P-0106-05	0.0050	
ASTM-P-0104-06	0.0125		ASTM-P-0105-06	0.0800		ASTM-P-0106-06	0.0075	
ASTM-P-0104-07	0.0150		ASTM-P-0105-07	0.1000		ASTM-P-0106-07	0.0100	
ASTM-P-0104-08	0.0175							
ASTM-P-0104-09	0.0200							

Internal Standard

ASTM-P-0107-5 500 mL
Manganese @ 0.05 Wt. % in Xylene-Mineral Oil

Organometallic Standards

for AA, ICP, DCP & XRF Analysis

Wear Metals



Lubricating Oil Standards

Designed for
ASTM D-6481-99

Lubricating Oil, Elements Wt.% (Nominal Value) listed below
ASTM-P-0108-SET
17 x 100 mL

Cat. No.	Ca (Wt.%)	P (Wt.%)	S (Wt.%)	Zn (Wt.%)
ASTM-P-0108-01	0.600	0.005	0.175	0.060
ASTM-P-0108-02	0.500	0.200	0.050	0.080
ASTM-P-0108-03	0.400	0.150	0.300	0.180
ASTM-P-0108-04	0.260	0.250	0.150	0.120
ASTM-P-0108-05	0.005	0.005	0.450	0.070
ASTM-P-0108-06	0.400	0.025	0.350	0.100
ASTM-P-0108-07	0.300	0.060	0.250	0.120
ASTM-P-0108-08	0.200	0.100	0.450	0.100
ASTM-P-0108-09	0.060	0.080	0.300	0.130
ASTM-P-0108-10	0.060	0.050	0.200	0.050
ASTM-P-0108-11	0.050	0.120	0.100	0.075
ASTM-P-0108-12	0.025	0.150	0.200	0.130
ASTM-P-0108-13	0.005	0.200	0.400	0.150
ASTM-P-0108-14	0.170	0.250	0.550	0.110
ASTM-P-0108-15	0.100	0.100	0.200	0.200
ASTM-P-0108-16	0.010	0.010	0.600	0.250
ASTM-P-0108-17	0.000	0.000	0.000	0.000

Lubricating Oil, Elements Wt.% (Nominal Value) listed below
ASTM-P-0109-SET
17 x 100 mL

Standard Cat. No.	Ca (Wt.%)	Cl (Wt.%)	P (Wt.%)	S (Wt.%)	Zn (Wt.%)
ASTM-P-0109-01	0.600	0.100	0.005	0.175	0.060
ASTM-P-0109-02	0.500	0.000	0.200	0.050	0.080
ASTM-P-0109-03	0.400	0.010	0.150	0.300	0.180
ASTM-P-0109-04	0.260	0.500	0.250	0.150	0.120
ASTM-P-0109-05	0.005	1.000	0.005	0.450	0.070
ASTM-P-0109-06	0.400	0.400	0.025	0.350	0.100
ASTM-P-0109-07	0.300	0.100	0.060	0.250	0.120
ASTM-P-0109-08	0.200	0.010	0.100	0.450	0.100
ASTM-P-0109-09	0.060	0.050	0.080	0.300	0.130
ASTM-P-0109-10	0.060	0.200	0.050	0.200	0.050
ASTM-P-0109-11	0.050	0.500	0.120	0.100	0.075
ASTM-P-0109-12	0.025	0.800	0.150	0.200	0.130
ASTM-P-0109-13	0.005	1.000	0.200	0.400	0.150
ASTM-P-0109-14	0.170	0.600	0.250	0.550	0.110
ASTM-P-0109-15	0.100	0.200	0.100	0.200	0.200
ASTM-P-0109-16	0.010	0.400	0.010	0.600	0.250
ASTM-P-0109-17	0.000	0.000	0.000	0.000	0.000

Designed for
ASTM D-4927-96

Designed for
ASTM D-4927-96

Lubricating Oil, Elements Wt.% (Nominal Value) listed below
ASTM-P-0110-SET
17 x 100 mL

Cat. No.	Ba (Wt.%)	Ca (Wt.%)	P (Wt.%)	S (Wt.%)	Zn (Wt.%)
ASTM-P-0110-01	0.100	0.600	0.005	0.175	0.060
ASTM-P-0110-02	0.175	0.500	0.200	0.050	0.080
ASTM-P-0110-03	0.000	0.400	0.150	0.300	0.180
ASTM-P-0110-04	0.025	0.260	0.250	0.150	0.120
ASTM-P-0110-05	0.150	0.005	0.005	0.450	0.070
ASTM-P-0110-06	0.000	0.400	0.025	0.350	0.100
ASTM-P-0110-07	0.200	0.300	0.060	0.250	0.120
ASTM-P-0110-08	0.000	0.200	0.100	0.450	0.100
ASTM-P-0110-09	0.100	0.060	0.080	0.300	0.130
ASTM-P-0110-10	0.050	0.060	0.050	0.200	0.050
ASTM-P-0110-11	0.075	0.050	0.120	0.100	0.075
ASTM-P-0110-12	0.010	0.025	0.150	0.200	0.130
ASTM-P-0110-13	0.005	0.005	0.200	0.400	0.150
ASTM-P-0110-14	0.000	0.170	0.250	0.550	0.110
ASTM-P-0110-15	0.000	0.100	0.100	0.200	0.200
ASTM-P-0110-16	0.005	0.010	0.010	0.600	0.250
ASTM-P-0110-17	0.000	0.000	0.000	0.000	0.000

Lubricating Oil, Elements Wt.% (Nominal Value) listed below
ASTM-P-0111-SET
17 x 100 mL

Cat. No.	Ba (Wt.%)	Ca (Wt.%)	Cl (Wt.%)	P (Wt.%)	S (Wt.%)	Zn (Wt.%)
ASTM-P-0111-01	0.100	0.600	0.100	0.005	0.175	0.060
ASTM-P-0111-02	0.175	0.500	0.000	0.200	0.050	0.080
ASTM-P-0111-03	0.000	0.400	0.010	0.150	0.300	0.180
ASTM-P-0111-04	0.025	0.260	0.500	0.250	0.150	0.120
ASTM-P-0111-05	0.150	0.005	1.000	0.005	0.450	0.070
ASTM-P-0111-06	0.000	0.400	0.400	0.025	0.350	0.100
ASTM-P-0111-07	0.200	0.300	0.100	0.060	0.250	0.120
ASTM-P-0111-08	0.000	0.200	0.010	0.100	0.450	0.100
ASTM-P-0111-09	0.100	0.060	0.050	0.080	0.300	0.130
ASTM-P-0111-10	0.050	0.060	0.200	0.050	0.200	0.050
ASTM-P-0111-11	0.075	0.050	0.500	0.120	0.100	0.075
ASTM-P-0111-12	0.010	0.025	0.800	0.150	0.200	0.130
ASTM-P-0111-13	0.005	0.005	1.000	0.200	0.400	0.150
ASTM-P-0111-14	0.000	0.170	0.600	0.250	0.550	0.110
ASTM-P-0111-15	0.000	0.100	0.200	0.100	0.200	0.200
ASTM-P-0111-16	0.005	0.010	0.400	0.010	0.600	0.250
ASTM-P-0111-17	0.000	0.000	0.000	0.000	0.000	0.000

Designed for ASTM
D-4628-97 & D-4927-96

Lubricating Oil, Elements Wt.% (Nominal Value) listed below
ASTM-P-0112-SET
16 x 100 mL

Cat. No.	Ca (Wt.%)	Mg (Wt.%)	P (Wt.%)	S (Wt.%)	Zn (Wt.%)
ASTM-P-0112-01	0.600	0.100	0.005	0.175	0.060
ASTM-P-0112-02	0.500	0.150	0.200	0.050	0.080
ASTM-P-0112-03	0.400	0.350	0.150	0.300	0.180
ASTM-P-0112-04	0.260	0.225	0.250	0.150	0.120
ASTM-P-0112-05	0.005	0.450	0.005	0.450	0.070
ASTM-P-0112-06	0.400	0.500	0.025	0.350	0.100
ASTM-P-0112-07	0.300	0.325	0.060	0.250	0.120
ASTM-P-0112-08	0.200	0.250	0.100	0.450	0.100
ASTM-P-0112-09	0.060	0.100	0.080	0.300	0.130
ASTM-P-0112-10	0.060	0.400	0.050	0.200	0.050
ASTM-P-0112-11	0.050	0.300	0.120	0.100	0.075
ASTM-P-0112-12	0.025	0.200	0.150	0.200	0.130
ASTM-P-0112-13	0.005	0.375	0.200	0.400	0.150
ASTM-P-0112-14	0.170	0.175	0.250	0.550	0.110
ASTM-P-0112-15	0.100	0.425	0.100	0.200	0.200
ASTM-P-0112-16	0.010	0.275	0.010	0.600	0.250
ASTM-P-0112-17	0.000	0.000	0.000	0.000	0.000

Lubricating Oil, Elements Wt.% (Nominal Value) listed below
ASTM-P-0113-SET
17 x 100 mL

Cat. No.	Ba (Wt.%)	Ca (Wt.%)	Mg (Wt.%)	P (Wt.%)	S (Wt.%)	Zn (Wt.%)
ASTM-P-0113-01	0.025	0.600	0.100	0.005	0.175	0.060
ASTM-P-0113-02	0.000	0.500	0.150	0.200	0.050	0.080
ASTM-P-0113-03	0.100	0.400	0.350	0.150	0.300	0.180
ASTM-P-0113-04	0.175	0.260	0.225	0.250	0.150	0.120
ASTM-P-0113-05	0.150	0.005	0.450	0.005	0.450	0.070
ASTM-P-0113-06	0.000	0.400	0.500	0.025	0.350	0.100
ASTM-P-0113-07	0.100	0.300	0.325	0.060	0.250	0.120
ASTM-P-0113-08	0.200	0.200	0.250	0.100	0.450	0.100
ASTM-P-0113-09	0.050	0.060	0.100	0.080	0.300	0.130
ASTM-P-0113-10	0.075	0.060	0.400	0.050	0.200	0.050
ASTM-P-0113-11	0.010	0.050	0.300	0.120	0.100	0.075
ASTM-P-0113-12	0.000	0.025	0.200	0.150	0.200	0.130
ASTM-P-0113-13	0.175	0.005	0.375	0.200	0.400	0.150
ASTM-P-0113-14	0.005	0.170	0.175	0.250	0.550	0.110
ASTM-P-0113-15	0.000	0.100	0.425	0.100	0.200	0.200
ASTM-P-0113-16	0.005	0.010	0.275	0.010	0.600	0.250
ASTM-P-0113-17	0.000	0.000	0.000	0.000	0.000	0.000

WEAR METALS

ORGANOMETALLIC



Organometallic Standards for AA, ICP, DCP & XRF Analysis

Lubricating Oil Standards **Continued**

Designed for
ASTM D-6481-99

Lubricating Oil, Elements, EDXRF ASTM Method
Wt.% (Nominal Value) listed below
ASTM-P-0114-SET

17 x 100 mL

Lubricating Oil, Elements Wt.% (Nominal Value) listed below
ASTM-P-0115-SET

17 x 100 mL

Cat. No.	Ca (Wt.%)	P (Wt.%)	S (Wt.%)	Zn (Wt.%)	Cat. No.	Ca (Wt.%)	P (Wt.%)	S (Wt.%)	Zn (Wt.%)	Mg (Wt.%)
ASTM-P-0114-01	0.005	0.005	0.050	0.050	ASTM-P-0115-01	0.005	0.005	0.050	0.050	0.100
ASTM-P-0114-02	0.600	0.000	0.000	0.000	ASTM-P-0115-02	0.600	0.000	0.000	0.000	0.150
ASTM-P-0114-03	0.000	0.300	0.000	0.000	ASTM-P-0115-03	0.000	0.300	0.000	0.000	0.350
ASTM-P-0114-04	1.000	0.000	1.000	0.000	ASTM-P-0115-04	1.000	0.000	1.000	0.000	.0225
ASTM-P-0114-05	0.000	0.000	0.000	0.300	ASTM-P-0115-05	0.000	0.000	0.000	0.300	0.450
ASTM-P-0114-06	0.005	0.250	0.800	0.300	ASTM-P-0115-06	0.005	0.250	0.800	0.300	0.500
ASTM-P-0114-07	0.500	0.150	0.500	0.150	ASTM-P-0115-07	0.500	0.150	0.500	0.150	0.325
ASTM-P-0114-08	0.010	0.200	0.100	0.250	ASTM-P-0115-08	0.010	0.200	0.100	0.250	0.250
ASTM-P-0114-09	0.050	0.010	0.400	0.075	ASTM-P-0115-09	0.050	0.010	0.400	0.075	0.050
ASTM-P-0114-10	0.100	0.150	0.200	0.200	ASTM-P-0115-10	0.100	0.150	0.200	0.200	0.400
ASTM-P-0114-11	0.200	0.200	0.800	0.100	ASTM-P-0115-11	0.200	0.200	0.800	0.100	0.300
ASTM-P-0114-12	0.400	0.005	0.800	0.300	ASTM-P-0115-12	0.400	0.005	0.800	0.300	0.200
ASTM-P-0114-13	0.600	0.100	0.500	0.050	ASTM-P-0115-13	0.600	0.100	0.500	0.050	0.375
ASTM-P-0114-14	0.800	0.010	0.050	0.100	ASTM-P-0115-14	0.800	0.010	0.050	0.100	0.175
ASTM-P-0114-15	1.000	0.300	1.000	0.150	ASTM-P-0115-15	1.000	0.300	1.000	.0150	0.425
ASTM-P-0114-16	0.400	0.050	0.600	0.250	ASTM-P-0115-16	0.400	0.050	0.600	0.250	0.275
ASTM-P-0114-17	0.000	0.000	0.000	0.000	ASTM-P-0115-17	0.000	0.000	0.000	0.000	0.000

Lubricating Oil, Additives Wt.% (Nominal Value) listed below
ASTM-P-0116-SET

11 x 100 mL

Cat. No.	Ca (Wt.%)	P (Wt.%)	S (Wt.%)	Zn (Wt.%)
ASTM-P-0116-01	0.500	1.000	0.500	0.500
ASTM-P-0116-02	3.000	1.000	3.000	2.000
ASTM-P-0116-03	2.000	1.250	1.000	1.500
ASTM-P-0116-04	5.000	1.500	0.500	1.200
ASTM-P-0116-05	4.000	0.500	1.500	0.750
ASTM-P-0116-06	2.500	0.750	4.000	1.000
ASTM-P-0116-07	4.000	0.500	2.000	1.250
ASTM-P-0116-08	0.500	2.000	5.000	1.000
ASTM-P-0116-09	1.000	0.750	2.000	1.500
ASTM-P-0116-10	2.500	1.200	3.000	0.500
ASTM-P-0116-11	0.000	0.000	0.000	0.000

Lubricating Oil, Elements, WLXRF ASTM Method Wt.% (Nominal Value) listed below

ASTM-P-0117-SET

10 x 100 mL

Cat. No.	Ca (Wt.%)	Cl (Wt.%)	Cu (Wt.%)	Mg (Wt.%)	P (Wt.%)	S (Wt.%)	Zn (Wt.%)
ASTM-P-0117-01	0.020	0.030	0.010	0.200	0.250	1.000	0.020
ASTM-P-0117-02	0.020	0.020	0.050	0.200	0.020	0.020	0.250
ASTM-P-0117-03	0.020	0.200	0.010	0.040	0.250	0.150	0.250
ASTM-P-0117-04	0.020	0.200	0.050	0.040	0.020	1.000	0.020
ASTM-P-0117-05	0.400	0.020	0.010	0.040	0.020	1.000	0.250
ASTM-P-0117-06	0.400	0.020	0.050	0.040	0.250	0.020	0.020
ASTM-P-0117-07	0.400	0.200	0.010	0.200	0.020	0.020	0.050
ASTM-P-0117-08	0.400	0.200	0.050	0.200	0.250	1.000	0.250
ASTM-P-0117-09	0.200	0.100	0.025	0.080	0.150	0.500	0.100
ASTM-P-0117-10	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Designed for
ASTM D-6443-99

Lubricating Oil, Elements, WLXRF ASTM Method Wt.% (Nominal Value) listed below

ASTM-P-0118-SET

10 x 100 mL

Cat. No.	Ba (Wt.%)	Ca (Wt.%)	Cl (Wt.%)	Cu (Wt.%)	Mg (Wt.%)	P (Wt.%)	S (Wt.%)	Zn (Wt.%)
ASTM-P-0118-01	0.020	0.020	0.030	0.010	0.200	0.250	1.000	0.020
ASTM-P-0118-02	0.250	0.020	0.020	0.050	0.200	0.020	0.020	0.250
ASTM-P-0118-03	0.020	0.020	0.200	0.010	0.040	0.250	0.150	0.250
ASTM-P-0118-04	0.250	0.020	0.200	0.050	0.040	0.020	1.000	0.020
ASTM-P-0118-05	0.020	0.400	0.020	0.010	0.040	0.020	1.000	0.250
ASTM-P-0118-06	0.250	0.400	0.020	0.050	0.040	0.250	0.020	0.020
ASTM-P-0118-07	0.020	0.400	0.200	0.010	0.200	0.020	0.020	0.050
ASTM-P-0118-08	0.250	0.400	0.200	0.050	0.200	0.250	1.000	0.250
ASTM-P-0118-09	0.130	0.200	0.100	0.025	0.080	0.150	0.500	0.100
ASTM-P-0118-10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Designed for ASTM
D-4628-97, D-4927-96
D-4951-96, D-6443-99

WEAR METALS

ORGANOMETALLIC

Organometallic Standards for AA, ICP, DCP & XRF Analysis

Wear Metals



Lubricating Oil Standards Continued

Lubricating Oil, Elements Wt.% (Nominal Value) listed below

ASTM-P-0119-SET

22 x 100 mL

Cat. No.	Ca (Wt.%)	Cl (Wt.%)	Cu (Wt.%)	Mg (Wt.%)	P (Wt.%)	S (Wt.%)	Zn (Wt.%)
ASTM-P-0119-01	0.300	0.080	0.030	0.060	0.060	0.275	0.060
ASTM-P-0119-02	0.250	0.100	0.000	0.010	0.150	0.000	0.150
ASTM-P-0119-03	0.500	0.000	0.035	0.160	0.150	0.000	0.020
ASTM-P-0119-04	0.350	0.010	0.000	0.120	0.080	0.200	0.000
ASTM-P-0119-05	0.110	0.000	0.015	0.100	0.100	0.300	0.050
ASTM-P-0119-06	0.200	0.100	0.000	0.200	0.050	0.250	0.150
ASTM-P-0119-07	0.000	0.050	0.025	0.000	0.000	0.450	0.020
ASTM-P-0119-08	0.150	0.030	0.000	0.100	0.030	0.400	0.040
ASTM-P-0119-09	0.250	0.150	0.010	0.160	0.000	0.350	0.080
ASTM-P-0119-10	0.110	0.150	0.040	0.005	0.030	0.750	0.150
ASTM-P-0119-11	0.260	0.050	0.000	0.000	0.000	0.750	0.000
ASTM-P-0119-12	0.200	0.000	0.005	0.140	0.080	0.500	0.080
ASTM-P-0119-13	0.000	0.000	0.005	0.020	0.020	0.200	0.020
ASTM-P-0119-14	0.070	0.150	0.020	0.080	0.140	0.650	0.150
ASTM-P-0119-15	0.050	0.000	0.000	0.000	0.150	0.000	0.000
ASTM-P-0119-16	0.400	0.000	0.001	0.080	0.000	0.500	0.020
ASTM-P-0119-17	0.180	0.020	0.020	0.000	0.020	0.600	0.060
ASTM-P-0119-18	0.400	0.010	0.001	0.010	0.020	0.000	0.000
ASTM-P-0119-19	0.010	0.020	0.040	0.010	0.020	0.200	0.100
ASTM-P-0119-20	0.050	0.005	0.050	0.000	0.008	0.000	0.120
ASTM-P-0119-21	0.200	0.050	0.020	0.080	0.050	0.275	0.050
ASTM-P-0119-22	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Designed for ASTM
D-4628-97, D-4927-96
D-4951-96, D-6443-99

Standards of Interest

Concentration for the sets on pages 62-65 are targets. Actual production lots may vary.

Lubricating Oil, Elements Wt.% (Nominal Value) listed below

ASTM-P-0120-SET

23 x 100 mL

Cat. No.	Ba (Wt.%)	Ca (Wt.%)	Cl (Wt.%)	Cu (Wt.%)	Mg (Wt.%)	P (Wt.%)	S (Wt.%)	Zn (Wt.%)
ASTM-P-0120-01	0.100	0.300	0.080	0.030	0.060	0.060	0.275	0.060
ASTM-P-0120-02	0.175	0.250	0.100	0.000	0.010	0.150	0.000	0.150
ASTM-P-0120-03	0.040	0.500	0.000	0.035	0.160	0.150	0.000	0.020
ASTM-P-0120-04	0.020	0.350	0.010	0.000	0.120	0.080	0.200	0.000
ASTM-P-0120-05	0.150	0.110	0.000	0.015	0.100	0.100	0.300	0.050
ASTM-P-0120-06	0.000	0.200	0.100	0.000	0.200	0.050	0.250	0.150
ASTM-P-0120-07	0.200	0.000	0.050	0.025	0.000	0.000	0.450	0.020
ASTM-P-0120-08	0.000	0.150	0.030	0.000	0.100	0.030	0.400	0.040
ASTM-P-0120-09	0.000	0.250	0.150	0.010	0.160	0.000	0.350	0.080
ASTM-P-0120-10	0.000	0.110	0.150	0.040	0.005	0.030	0.750	0.150
ASTM-P-0120-11	0.100	0.260	0.050	0.000	0.000	0.000	0.750	0.000
ASTM-P-0120-12	0.050	0.200	0.000	0.005	0.140	0.080	0.500	0.080
ASTM-P-0120-13	0.000	0.000	0.000	0.005	0.020	0.020	0.200	0.020
ASTM-P-0120-14	0.080	0.070	0.150	0.020	0.080	0.140	0.650	0.150
ASTM-P-0120-15	0.010	0.050	0.000	0.000	0.000	0.150	0.000	0.000
ASTM-P-0120-16	0.000	0.400	0.000	0.001	0.080	0.000	0.500	0.020
ASTM-P-0120-17	0.000	0.180	0.020	0.020	0.000	0.020	0.600	0.060
ASTM-P-0120-18	0.000	0.400	0.010	0.001	0.010	0.020	0.000	0.000
ASTM-P-0120-19	0.150	0.010	0.020	0.040	0.010	0.020	0.200	0.100
ASTM-P-0120-20	0.005	0.050	0.005	0.050	0.000	0.008	0.000	0.120
ASTM-P-0120-21	0.100	0.200	0.050	0.020	0.080	0.050	0.275	0.050
ASTM-P-0120-22	0.120	0.200	0.000	0.000	0.000	0.000	0.750	0.000
ASTM-P-0120-23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

ORGANOMETALLIC

Metal Working Fluids

Metal Working Fluid Wt.% (Nominal Value) listed below

ASTM-P-0121-SET

13 x 100 mL

Standard No.	Cl (Wt.%)	P (Wt.%)	S (Wt.%)
ASTM-P-0121-01	0.000	0.000	0.000
ASTM-P-0121-02	0.750	0.025	0.500
ASTM-P-0121-03	0.050	0.100	3.000
ASTM-P-0121-04	1.000	0.500	2.500
ASTM-P-0121-05	0.100	0.005	2.000
ASTM-P-0121-06	1.500	0.200	1.000
ASTM-P-0121-07	2.000	0.005	3.000
ASTM-P-0121-08	1.000	0.050	0.100
ASTM-P-0121-09	0.500	0.400	0.000
ASTM-P-0121-10	2.000	0.200	1.500
ASTM-P-0121-11	0.000	0.500	1.500
ASTM-P-0121-12	1.250	0.010	0.050
ASTM-P-0121-13	0.050	0.300	0.050

Stabilization Solutions

The solutions were specifically designed for chelating and solubilizing the organometallic line of solids and solutions for single and multi-element standards.

Stabilizer Solutions A

ASTM-P-0122-0.5 50 mL
ASTM-P-0122-1 100 mL

Stabilizer Solutions B

ASTM-P-0123-0.5 50 mL
ASTM-P-0123-1 100 mL
(use in conjunction with stabilizer solution A)

Petrochemical Standards

Proposed ASTM Method Trace Metals

Phosphorous, Sulfur, Calcium, & Zinc in Lubrication Oils by XRF

ASTM-P-0090-SET 16 x 4 oz.					
Cat. No.	Calcium Wt. %	Phosphorus Wt. %	Sulfur Wt. %	Zinc Wt. %	Unit
ASTM-P-0090-01	0	0	0	0	4 oz.
ASTM-P-0090-02	0	0.02	0.3	0.175	4 oz.
ASTM-P-0090-03	0.005	0	0.55	0.14	4 oz.
ASTM-P-0090-04	0.025	0.175	0.35	0.1	4 oz.
ASTM-P-0090-05	0.05	0.15	0.2	0.2	4 oz.
ASTM-P-0090-06	0.075	0.225	0.5	0.15	4 oz.
ASTM-P-0090-07	0.1	0.01	0.45	0.25	4 oz.
ASTM-P-0090-08	0.1	0.125	0.6	0.06	4 oz.
ASTM-P-0090-09	0.15	0.1	0.25	0.089	4 oz.
ASTM-P-0090-10	0.2	0.008	0.075	0.12	4 oz.
ASTM-P-0090-11	0.25	0.05	0.125	0	4 oz.
ASTM-P-0090-12	0.3	0.06	0.1	0.13	4 oz.
ASTM-P-0090-13	0.35	0.004	0.4	0.11	4 oz.
ASTM-P-0090-14	0.4	0.2	0.175	0.05	4 oz.
ASTM-P-0090-15	0.5	0.03	0.15	0.07	4 oz.
ASTM-P-0090-16	0.6	0.005	0.05	0.08	4 oz.

Proposed ASTM Method for Chlorine in Lube Oils

Chlorine in Lube Oils

ASTM-P-0092-SET 7 x 4 oz.				
Cat. No.	Chlorine Wt. %	Chlorine µg/g	Unit	
ASTM-P-0092-BL	Blank	Blank	4 oz.	
ASTM-P-0092-0.1X	0.001	10	4 oz.	
ASTM-P-0092-1X	0.01	100	4 oz.	
ASTM-P-0092-5X	0.05	500	4 oz.	
ASTM-P-0092-10X	0.1	1,000	4 oz.	
ASTM-P-0092-100X	1	10,000	4 oz.	
ASTM-P-0092-500X	5	50,000	4 oz.	

The Organo Tin standards shown below were developed in response to concerns about Organo Tin as an endocrine disrupter. Organo Tin compounds such as Tributyl Tin were used as marine antifouling agents and Triphenyl Tin as a crop pesticide.

Organo Tin Analysis

Sample Extraction, Derivatization & Cleanup with Analysis by Flame-Photometric Detector

Butyltin Chloride Standard OMT-001 1 x 1 mL OMT-001-PAK SAVE 20% 5 x 1 mL 2000 µg/mL each in CH ₂ Cl ₂ 4 comps. Butyltin trichloride Tetrabutyltin Dibutyltin dichloride Tributyltin chloride	Tri-<i>n</i>-propyltin Chloride Surrogate Standard OMT-003 1 x 1 mL OMT-003-PAK SAVE 20% 5 x 1 mL 2000 µg/mL in CH ₂ Cl ₂ Tri- <i>n</i> -propyltin chloride	Tetra-<i>n</i>-propyltin chloride Internal Standard OMT-005 1 x 1 mL OMT-005-PAK SAVE 20% 5 x 1 mL 2000 µg/mL in CH ₂ Cl ₂ Tetra- <i>n</i> -propyl tin chloride
Phenyltin Chloride Standard OMT-002 1 x 1 mL OMT-002-PAK SAVE 20% 5 x 1 mL 2000 µg/mL each in CH ₂ Cl ₂ 4 comps. Diphenyltin dichloride Tetraphenyltin Phenyltin trichloride Triphenyltin chloride	Triphenyltin Chloride Surrogate Standard OMT-004 1 x 1 mL OMT-004-PAK SAVE 20% 5 x 1 mL 2000 µg/mL in CH ₂ Cl ₂ Triphenyltin chloride	Tetraphenyltin Chloride Internal Standard OMT-006 1 x 1 mL OMT-006-PAK SAVE 20% 5 x 1 mL 2000 µg/mL in CH ₂ Cl ₂ Tetraphenyltin chloride

Inorganic Standards

INO

ICP, ICP/MS, AA, Ion Chrom

Used for influent and effluent monitoring in aqueous matrices by ASTM and other EPA Methods in the Petrochemical Industry.

- Formulated from High Purity Starting Materials, Water & Acids
- Concentration verified by Wet Chemical & Instrumental Analysis
- Certificate of Analysis provided with each Standard
- Actual Lot Analysis provided on label & Certificate of Analysis
- Packaged in specially prepared pre-cleaned bottles
- 18 Month Stability Dating

Inorganic Petrochemical Reference Standards

	page
ICP	68-71
IPC/MS	72
AA	73-75
Ion Chrom	76-79

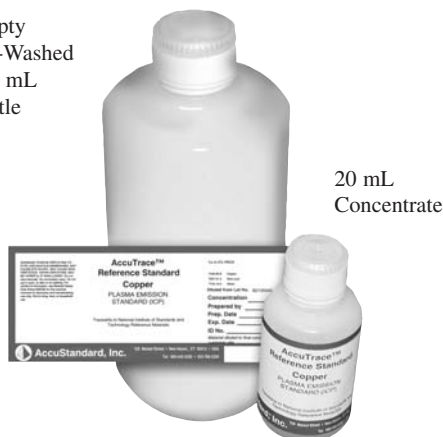


Traceable to NIST Reference Materials

Stop Paying Hazardous Shipping Fees! AccuNoHaz

All NoHaz products come as kits including 20 mL of concentrate, pre-cleaned and pre-labeled dilution bottle, instructions and Certificate of Analysis

Empty
Pre-Washed
500 mL
Bottle



ICP

69 elements at 10K µg/mL &
59 elements at 25K µg/mL
see pages 68-71

AA

69 elements at 10K µg/mL &
59 elements at 25K µg/mL
see pages 73-75

20 mL meets the Excepted Quantity rule under DOT & IATA regulations which do not require hazardous shipping fees.

INORGANIC

ICP Single Element Standards

Plasma Emission Spectroscopy



Element	Starting Mat'l	Unit	1000 µg/mL		10,000 µg/mL		NoHaz Package (No Hazardous Charges) *			
			Cat. No.	Price	Cat. No.	Price	10,000 µg/mL		25,000 µg/mL	
Matrix							Cat. No.	Price	Cat. No.	Price
Aluminum		20 mL	----	--	----	--	ICP-01N-10X-20ML		ICP-01N-25X-20ML	
Al(NO ₃) ₃ • 9H ₂ O		50 mL	----	--	ICP-01N-0.5-10X		----	--	----	--
2-5% Nitric acid		100 mL	ICP-01N-1		ICP-01N-1-10X		----	--	----	--
		500 mL	ICP-01N-5		ICP-01N-5-10X		----	--	----	--
Antimony		20 mL	----	--	----	--	ICP-02N-10X-20ML	37	----	--
Sb		50 mL	----	--	ICP-02N-0.5-10X	36	----	--	----	--
2-5% Nitric acid		100 mL	ICP-02N-1	34	ICP-02N-1-10X	65	----	--	----	--
		500 mL	ICP-02N-5	67	ICP-02N-5-10X	135	----	--	----	--
Arsenic		20 mL	----	--	----	--	ICP-03N-10X-20ML		ICP-03N-25X-20ML	
As		50 mL	----	--	ICP-03N-0.5-10X		----	--	----	--
2-5% Nitric acid		100 mL	ICP-03N-1		ICP-03N-1-10X		----	--	----	--
		500 mL	ICP-03N-5		ICP-03N-5-10X		----	--	----	--
Barium		20 mL	----	--	----	--	ICP-04N-10X-20ML	37	ICP-04N-25X-20ML	70
Ba(NO ₃) ₂		50 mL	----	--	ICP-04N-0.5-10X	32	----	--	----	--
2-5% Nitric acid		100 mL	ICP-04N-1	34	ICP-04N-1-10X	54	----	--	----	--
		500 mL	ICP-04N-5	67	ICP-04N-5-10X	120	----	--	----	--
Beryllium		20 mL	----	--	----	--	ICP-05N-10X-20ML		----	--
BeO(C ₂ H ₅ O ₂) ₆		50 mL	----	--	ICP-05N-0.5-10X		----	--	----	--
2-5% Nitric acid		100 mL	ICP-05N-1		ICP-05N-1-10X		----	--	----	--
		500 mL	ICP-05N-5		ICP-05N-5-10X		----	--	----	--
Bismuth		20 mL	----	--	----	--	ICP-06N-10X-20ML	37	ICP-06N-25X-20ML	70
Bi		50 mL	----	--	ICP-06N-0.5-10X	36	----	--	----	--
2-5% Nitric acid		100 mL	ICP-06N-1	34	ICP-06N-1-10X	65	----	--	----	--
		500 mL	ICP-06N-5	67	ICP-06N-5-10X	135	----	--	----	--
Boron		20 mL	----	--	----	--	ICP-07W-10X-20ML		----	--
H ₃ BO ₃		50 mL	----	--	ICP-07W-0.5-10X		----	--	----	--
Water tr. NH ₄ OH		100 mL	ICP-07W-1		ICP-07W-1-10X		----	--	----	--
		500 mL	ICP-07W-5		ICP-07W-5-10X		----	--	----	--
Cadmium		20 mL	----	--	----	--	ICP-08N-10X-20ML	37	ICP-08N-25X-20ML	70
Cd		50 mL	----	--	ICP-08N-0.5-10X	32	----	--	----	--
2-5% Nitric acid		100 mL	ICP-08N-1	34	ICP-08N-1-10X	54	----	--	----	--
		500 mL	ICP-08N-5	67	ICP-08N-5-10X	120	----	--	----	--
Calcium		20 mL	----	--	----	--	ICP-09N-10X-20ML		ICP-09N-25X-20ML	
CaCO ₃		50 mL	----	--	ICP-09N-0.5-10X		----	--	----	--
2-5% Nitric acid		100 mL	ICP-09N-1		ICP-09N-1-10X		----	--	----	--
		500 mL	ICP-09N-5		ICP-09N-5-10X		----	--	----	--
Cerium		20 mL	----	--	----	--	ICP-11N-10X-20ML	37	ICP-11N-25X-20ML	80
Ce(NO ₃) ₃		50 mL	----	--	ICP-11N-0.5-10X	32	----	--	----	--
2-5% Nitric acid		100 mL	ICP-11N-1	34	ICP-11N-1-10X	54	----	--	----	--
		500 mL	ICP-11N-5	67	ICP-11N-5-10X	168	----	--	----	--
Cesium		20 mL	----	--	----	--	ICP-12N-10X-20ML		ICP-12N-25X-20ML	
CsNO ₃		50 mL	----	--	ICP-12N-0.5-10X		----	--	----	--
2-5% Nitric acid		100 mL	ICP-12N-1		ICP-12N-1-10X		----	--	----	--
		500 mL	ICP-12N-5		ICP-12N-5-10X		----	--	----	--
Chromium		20 mL	----	--	----	--	ICP-13N-10X-20ML	37	ICP-13N-25X-20ML	70
reduced to (+3) state		50 mL	----	--	ICP-13N-0.5-10X	34	----	--	----	--
(NH ₄) ₂ Cr ₂ O ₇		100 mL	ICP-13N-1	34	ICP-13N-1-10X	59	----	--	----	--
2-5% Nitric acid		500 mL	ICP-13N-5	67	ICP-13N-5-10X	125	----	--	----	--
Chromium		50 mL	----	--	ICP-13H-0.5-10X		ICP-13H-0.5-10X		----	--
reduced to (+3) state		100 mL	ICP-13H-1		ICP-13H-1-10X		----	--	----	--
Cr		500 mL	ICP-13H-5		ICP-13H-5-10X		----	--	----	--
2-5% Nitric acid										
Cobalt		20 mL	----	--	----	--	ICP-14N-10X-20ML	37	ICP-14N-25X-20ML	70
Co		50 mL	----	--	ICP-14N-0.5-10X	32	----	--	----	--
2-5% Nitric acid		100 mL	ICP-14N-1	34	ICP-14N-1-10X	54	----	--	----	--
		500 mL	ICP-14N-5	67	ICP-14N-5-10X	168	----	--	----	--
Copper		20 mL	----	--	----	--	ICP-15N-10X-20ML		ICP-15N-25X-20ML	
Cu		50 mL	----	--	ICP-15N-0.5-10X		----	--	----	--
2-5% Nitric acid		100 mL	ICP-15N-1		ICP-15N-1-10X		----	--	----	--
		500 mL	ICP-15N-5		ICP-15N-5-10X		----	--	----	--
Dysprosium		20 mL	----	--	----	--	ICP-16N-10X-20ML	55	ICP-16N-25X-20ML	100
Dy ₂ O ₃		50 mL	----	--	ICP-16N-0.5-10X	45	----	--	----	--
2-5% Nitric acid		100 mL	ICP-16N-1	42	ICP-16N-1-10X	75	----	--	----	--
		500 mL	ICP-16N-5	82	ICP-16N-5-10X	231	----	--	----	--
Erbium		20 mL	----	--	----	--	ICP-17N-10X-20ML		ICP-17N-25X-20ML	
Er ₂ O ₃		50 mL	----	--	ICP-17N-0.5-10X		----	--	----	--
2-5% Nitric acid		100 mL	ICP-17N-1		ICP-17N-1-10X		----	--	----	--
		500 mL	ICP-17N-5		ICP-17N-5-10X		----	--	----	--
Europium		20 mL	----	--	----	--	ICP-18N-10X-20ML	55	ICP-18N-25X-20ML	100
Eu ₂ O ₃		50 mL	----	--	ICP-18N-0.5-10X	52	----	--	----	--
2-5% Nitric acid		100 mL	ICP-18N-1	42	ICP-18N-1-10X	85	----	--	----	--
		500 mL	ICP-18N-5	82	ICP-18N-5-10X	185	----	--	----	--
Gadolinium		20 mL	----	--	----	--	ICP-19N-10X-20ML		ICP-19N-25X-20ML	
Gd ₂ O ₃		50 mL	----	--	ICP-19N-0.5-10X		----	--	----	--
2-5% Nitric acid		100 mL	ICP-19N-1		ICP-19N-1-10X		----	--	----	--
		500 mL	ICP-19N-5		ICP-19N-5-10X		----	--	----	--

ICP

ICP Single Element Standards

Plasma Emission Spectroscopy



Element		1000 µg/mL				10,000 µg/mL				NoHaz Package (No Hazardous Charges) * 10,000 µg/mL				25,000 µg/mL			
Starting Mat'l	Unit	Cat. No.		Price		Cat. No.		Price		Cat. No.		Price		Cat. No.		Price	
Matrix	Unit	Cat. No.	Price	Cat. No.	Price	Cat. No.	Price	Cat. No.	Price	Cat. No.	Price	Cat. No.	Price	Cat. No.	Price	Cat. No.	Price
Gallium	20 mL	----	--	----	--	ICP-20N-10X-20ML	----	----	--	----	--	----	--	----	--	----	--
Ga	50 mL	----	--	ICP-20N-0.5-10X	--	----	--	----	--	----	--	----	--	----	--	----	--
2-5% Nitric acid	100 mL	ICP-20N-1	42	ICP-20N-1-10X	85	----	--	----	--	----	--	----	--	----	--	----	--
	500 mL	ICP-20N-5	82	ICP-20N-5-10X	231	----	--	----	--	----	--	----	--	----	--	----	--
Germanium	20 mL	----	--	----	--	ICP-21W-10X-20ML	55	----	--	----	--	----	--	----	--	----	--
(NH ₄) ₂ GeF ₆	50 mL	----	--	ICP-21W-0.5-10X	52	----	--	----	--	----	--	----	--	----	--	----	--
Water tr. HF	100 mL	ICP-21W-1	42	ICP-21W-1-10X	85	----	--	----	--	----	--	----	--	----	--	----	--
	500 mL	ICP-21W-5	82	ICP-21W-5-10X	231	----	--	----	--	----	--	----	--	----	--	----	--
Gold	20 mL	----	--	----	--	ICP-22H-10X-20ML	----	ICP-22H-25X-20ML	----	----	--	----	--	----	--	----	--
Au	50 mL	----	--	ICP-22H-0.5-10X	----	----	--	----	--	----	--	----	--	----	--	----	--
10% HCl (min.)	100 mL	ICP-22H-1	----	ICP-22H-1-10X	----	----	--	----	--	----	--	----	--	----	--	----	--
	500 mL	ICP-22H-5	----	ICP-22H-5-10X	----	----	--	----	--	----	--	----	--	----	--	----	--
Hafnium	20 mL	----	--	----	--	ICP-23N-10X-20ML	75	ICP-23N-25X-20ML	135	----	--	----	--	----	--	----	--
HfO ₂	50 mL	----	--	ICP-23N-0.5-10X	80	----	--	----	--	----	--	----	--	----	--	----	--
2-5% Nitric acid tr. HF	100 mL	ICP-23N-1	60	ICP-23N-1-10X	135	----	--	----	--	----	--	----	--	----	--	----	--
	500 mL	ICP-23N-5	118	ICP-23N-5-10X	364	----	--	----	--	----	--	----	--	----	--	----	--
Holmium	20 mL	----	--	----	--	ICP-24N-10X-20ML	----	ICP-24N-25X-20ML	----	----	--	----	--	----	--	----	--
Ho ₂ O ₃	50 mL	----	--	ICP-24N-0.5-10X	----	----	--	----	--	----	--	----	--	----	--	----	--
2-5% Nitric acid	100 mL	ICP-24N-1	----	ICP-24N-1-10X	----	----	--	----	--	----	--	----	--	----	--	----	--
	500 mL	ICP-24N-5	----	ICP-24N-5-10X	----	----	--	----	--	----	--	----	--	----	--	----	--
Indium	20 mL	----	--	----	--	ICP-25N-10X-20ML	55	ICP-25N-25X-20ML	100	----	--	----	--	----	--	----	--
In	50 mL	----	--	ICP-25N-0.5-10X	52	----	--	----	--	----	--	----	--	----	--	----	--
2-5% Nitric acid	100 mL	ICP-25N-1	42	ICP-25N-1-10X	85	----	--	----	--	----	--	----	--	----	--	----	--
	500 mL	ICP-25N-5	82	ICP-25N-5-10X	185	----	--	----	--	----	--	----	--	----	--	----	--
Iridium	20 mL	----	--	----	--	ICP-26H-10X-20ML	----	ICP-26H-25X-20ML	----	----	--	----	--	----	--	----	--
IrCl ₃ • 3H ₂ O	50 mL	----	--	ICP-26H-0.5-10X	----	----	--	----	--	----	--	----	--	----	--	----	--
10% HCl (min.)	100 mL	ICP-26H-1	----	ICP-26H-1-10X	----	----	--	----	--	----	--	----	--	----	--	----	--
	500 mL	ICP-26H-5	----	ICP-26H-5-10X	----	----	--	----	--	----	--	----	--	----	--	----	--
Iron	20 mL	----	--	----	--	ICP-27N-10X-20ML	37	ICP-27N-25X-20ML	70	----	--	----	--	----	--	----	--
Fe	50 mL	----	--	ICP-27N-0.5-10X	32	----	--	----	--	----	--	----	--	----	--	----	--
2-5% Nitric acid	100 mL	ICP-27N-1	34	ICP-27N-1-10X	54	----	--	----	--	----	--	----	--	----	--	----	--
	500 mL	ICP-27N-5	67	ICP-27N-5-10X	120	----	--	----	--	----	--	----	--	----	--	----	--
Lanthanum	20 mL	----	--	----	--	ICP-28N-10X-20ML	----	ICP-28N-25X-20ML	----	----	--	----	--	----	--	----	--
La ₂ O ₃	50 mL	----	--	ICP-28N-0.5-10X	----	----	--	----	--	----	--	----	--	----	--	----	--
2-5% Nitric acid	100 mL	ICP-28N-1	----	ICP-28N-1-10X	----	----	--	----	--	----	--	----	--	----	--	----	--
	500 mL	ICP-28N-5	----	ICP-28N-5-10X	----	----	--	----	--	----	--	----	--	----	--	----	--
Lead	20 mL	----	--	----	--	ICP-29N-10X-20ML	37	ICP-29N-25X-20ML	70	----	--	----	--	----	--	----	--
Pb(NO ₃) ₂	50 mL	----	--	ICP-29N-0.5-10X	32	----	--	----	--	----	--	----	--	----	--	----	--
2-5% Nitric acid	100 mL	ICP-29N-1	34	ICP-29N-1-10X	54	----	--	----	--	----	--	----	--	----	--	----	--
	500 mL	ICP-29N-5	67	ICP-29N-5-10X	168	----	--	----	--	----	--	----	--	----	--	----	--
Lithium	20 mL	----	--	----	--	ICP-30N-10X-20ML	----	ICP-30N-25X-20ML	----	----	--	----	--	----	--	----	--
Li ₂ CO ₃	50 mL	----	--	ICP-30N-0.5-10X	----	----	--	----	--	----	--	----	--	----	--	----	--
2-5% Nitric acid	100 mL	ICP-30N-1	----	ICP-30N-1-10X	----	----	--	----	--	----	--	----	--	----	--	----	--
	500 mL	ICP-30N-5	----	ICP-30N-5-10X	----	----	--	----	--	----	--	----	--	----	--	----	--
Lutetium	20 mL	----	--	----	--	ICP-31N-10X-20ML	90	ICP-31N-25X-20ML	300	----	--	----	--	----	--	----	--
Lu ₂ O ₃	50 mL	----	--	ICP-31N-0.5-10X	175	----	--	----	--	----	--	----	--	----	--	----	--
2-5% Nitric acid	100 mL	ICP-31N-1	75	ICP-31N-1-10X	295	----	--	----	--	----	--	----	--	----	--	----	--
	500 mL	ICP-31N-5	265	ICP-31N-5-10X	1393	----	--	----	--	----	--	----	--	----	--	----	--
Magnesium	20 mL	----	--	----	--	ICP-32N-10X-20ML	----	ICP-32N-25X-20ML	----	----	--	----	--	----	--	----	--
MgO	50 mL	----	--	ICP-32N-0.5-10X	----	----	--	----	--	----	--	----	--	----	--	----	--
2-5% Nitric acid	100 mL	ICP-32N-1	----	ICP-32N-1-10X	----	----	--	----	--	----	--	----	--	----	--	----	--
	500 mL	ICP-32N-5	----	ICP-32N-5-10X	----	----	--	----	--	----	--	----	--	----	--	----	--
Manganese	20 mL	----	--	----	--	ICP-33N-10X-20ML	37	ICP-33N-25X-20ML	70	----	--	----	--	----	--	----	--
Mn(C ₂ H ₃ O ₂) ₂	50 mL	----	--	ICP-33N-0.5-10X	32	----	--	----	--	----	--	----	--	----	--	----	--
2-5% Nitric acid	100 mL	ICP-33N-1	34	ICP-33N-1-10X	54	----	--	----	--	----	--	----	--	----	--	----	--
	500 mL	ICP-33N-5	67	ICP-33N-5-10X	168	----	--	----	--	----	--	----	--	----	--	----	--
Mercury	20 mL	----	--	----	--	ICP-34N-10X-20ML	----	ICP-34N-25X-20ML	----	----	--	----	--	----	--	----	--
Hg	50 mL	----	--	ICP-34N-0.5-10X	----	----	--	----	--	----	--	----	--	----	--	----	--
10% Nitric acid	100 mL	ICP-34N-1	----	ICP-34N-1-10X	----	----	--	----	--	----	--	----	--	----	--	----	--
	500 mL	ICP-34N-5	----	ICP-34N-5-10X	----	----	--	----	--	----	--	----	--	----	--	----	--
Molybdenum	20 mL	----	--	----	--	ICP-35W-10X-20ML	37	ICP-35W-25X-20ML	70	----	--	----	--	----	--	----	--
(NH ₄) ₂ MoO ₄	50 mL	----	--	ICP-35W-0.5-10X	32	----	--	----	--	----	--	----	--	----	--	----	--
Water tr. NH ₄ OH	100 mL	ICP-35W-1	34	ICP-35W-1-10X	54	----	--	----	--	----	--	----	--	----	--	----	--
	500 mL	ICP-35W-5	67	ICP-35W-5-10	120	----	--	----	--	----	--	----	--	----	--	----	--
Neodymium	20 mL	----	--	----	--	ICP-36N-10X-20ML	----	ICP-36N-25X-20ML	----	----	--	----	--	----	--	----	--
Nd ₂ O ₃	50 mL	----	--	ICP-36N-0.5-10X	----	----	--	----	--	----	--	----	--	----	--	----	--
2-5% Nitric acid	100 mL	ICP-36N-1	----	ICP-36N-1-10X	----	----	--	----	--	----	--	----	--	----	--	----	--
	500 mL	ICP-36N-5	----	ICP-36N-5-10X	----	----	--	----	--	----	--	----	--	----	--	----	--
Nickel	20 mL	----	--	----	--	ICP-37N-10X-20ML	37	ICP-37N-25X-20ML	70	----	--	----	--	----	--	----	--
Ni	50 mL	----	--	ICP-37N-0.5-10X	32	----	--	----	--	----	--	----	--	----	--	----	--
2-5% Nitric acid	100 mL	ICP-37N-1	34	ICP-37N-1-10X	54	----	--	----	--	----	--	----	--	----	--	----	--
	500 mL	ICP-37N-5	67	ICP-37N-5-10X	120	----	--	----	--	----	--	----	--	----	--	----	--

* see page 67 for details

Single Element Standards for Plasma Emission Spectroscopy Continued on Next Page

ICP Single Element Standards

Plasma Emission Spectroscopy

Element	Starting Mat'l	Unit	1000 µg/mL		10,000 µg/mL		NoHaz Package (No Hazardous Charges) *			
			Cat. No.	Price	Cat. No.	Price	10,000 µg/mL		25,000 µg/mL	
Matrix							Cat. No.	Price	Cat. No.	Price
Niobium		20 mL	----	--	----	--	ICP-38W-10X-20ML		ICP-38W-25X-20ML	
	Nb ₂ O ₅	50 mL	----	--	ICP-38W-0.5-10X		----	--	----	--
	Water tr. HF	100 mL	ICP-38W-1		ICP-38W-1-10X		----	--	----	--
		500 mL	ICP-38W-5		ICP-38W-5-10X		----	--	----	--
Palladium		20 mL	----	--	----	--	ICP-40H-10X-20ML	95	ICP-40H-25X-20ML	165
	Pd	50 mL	----	--	ICP-40H-0.5-10X	175	----	--	----	--
	10% HCl (min.)	100 mL	ICP-40H-1	78	ICP-40H-1-10X	295	----	--	----	--
		500 mL	ICP-40H-5	152	ICP-40H-5-10X	973	----	--	----	--
Phosphorus		20 mL	----	--	----	--	ICP-41W-10X-20ML		----	--
	NH ₄ H ₂ PO ₄	50 mL	----	--	ICP-41W-0.5-10X		----	--	----	--
	Water	100 mL	ICP-41W-1		ICP-41W-1-10X		----	--	----	--
		500 mL	ICP-41W-5		ICP-41W-5-10X		----	--	----	--
Platinum		20 mL	----	--	----	--	ICP-42H-10X-20ML	95	ICP-42H-25X-20ML	165
	Pt	50 mL	----	--	ICP-42H-0.5-10X	175	----	--	----	--
	10% HCl (min.)	100 mL	ICP-42H-1	78	ICP-42H-1-10X	295	----	--	----	--
		500 mL	ICP-42H-5	152	ICP-42H-5-10X	895	----	--	----	--
Potassium		20 mL	----	--	----	--	ICP-43N-10X-20ML		ICP-43N-25X-20ML	
	KNO ₃	50 mL	----	--	ICP-43N-0.5-10X		----	--	----	--
	2-5% Nitric acid	100 mL	ICP-43N-1		ICP-43N-1-10X		----	--	----	--
		500 mL	ICP-43N-5		ICP-43N-5-10X		----	--	----	--
Praseodymium		20 mL	----	--	----	--	ICP-44N-10X-20ML	55	ICP-44N-25X-20ML	100
	Pr ₂ O ₃	50 mL	----	--	ICP-44N-0.5-10X	72	----	--	----	--
	2-5% Nitric acid	100 mL	ICP-44N-1	42	ICP-44N-1-10X	120	----	--	----	--
		500 mL	ICP-44N-5	82	ICP-44N-5-10X	329	----	--	----	--
Rhenium		20 mL	----	--	----	--	ICP-45W-10X-20ML		ICP-45W-25X-20ML	
	Re	50 mL	----	--	ICP-45W-0.5-10X		----	--	----	--
	Water	100 mL	ICP-45W-1		ICP-45W-1-10X		----	--	----	--
		500 mL	ICP-45W-5		ICP-45W-5-10X		----	--	----	--
Rhodium		20 mL	----	--	----	--	ICP-46H-10X-20ML	250	ICP-46H-25X-20ML	475
	RhCl ₃ • 3H ₂ O	50 mL	----	--	ICP-46H-0.5-10X	315	----	--	----	--
	10% HCl (min.)	100 mL	ICP-46H-1	190	ICP-46H-1-10X	525	----	--	----	--
		500 mL	ICP-46H-5	425	ICP-46H-5-10X	2050	----	--	----	--
Rubidium		20 mL	----	--	----	--	ICP-47N-10X-20ML		ICP-47N-25X-20ML	
	RbNO ₃	50 mL	----	--	ICP-47N-0.5-10X		----	--	----	--
	2-5% Nitric acid	100 mL	ICP-47N-1		ICP-47N-1-10X		----	--	----	--
		500 mL	ICP-47N-5		ICP-47N-5-10X		----	--	----	--
Ruthenium		20 mL	----	--	----	--	ICP-48H-10X-20ML	95	ICP-48H-25X-20ML	185
	RuCl ₃ • 3H ₂ O	50 mL	----	--	ICP-48H-0.5-10X	175	----	--	----	--
	10% HCl	100 mL	ICP-48H-1	78	ICP-48H-1-10X	295	----	--	----	--
		500 mL	ICP-48H-5	152	ICP-48H-5-10X	895	----	--	----	--
Samarium		20 mL	----	--	----	--	ICP-49N-10X-20ML		ICP-49N-25X-20ML	
	Sm ₂ O ₃	50 mL	----	--	ICP-49N-0.5-10X		----	--	----	--
	2-5% Nitric acid	100 mL	ICP-49N-1		ICP-49N-1-10X		----	--	----	--
		500 mL	ICP-49N-5		ICP-49N-5-10X		----	--	----	--
Scandium		20 mL	----	--	----	--	ICP-50N-10X-20ML	95	ICP-50N-25X-20ML	175
	Sc ₂ O ₃	50 mL	----	--	ICP-50N-0.5-10X	175	----	--	----	--
	2-5% Nitric acid	100 mL	ICP-50N-1	78	ICP-50N-1-10X	295	----	--	----	--
		500 mL	ICP-50N-5	152	ICP-50N-5-10X	973	----	--	----	--
Selenium		20 mL	----	--	----	--	ICP-51N-10X-20ML		ICP-51N-25X-20ML	
	Se	50 mL	----	--	ICP-51N-0.5-10X		----	--	----	--
	2-5% Nitric acid	100 mL	ICP-51N-1		ICP-51N-1-10X		----	--	----	--
		500 mL	ICP-51N-5		ICP-51N-5-10X		----	--	----	--
Silicon		20 mL	----	--	----	--	ICP-52W-10X-20ML	37	----	--
	(NH ₄) ₂ SiF ₆	50 mL	----	--	ICP-52W-0.5-10X	32	----	--	----	--
	Water tr. HF	100 mL	ICP-52W-1	34	ICP-52W-1-10X	54	----	--	----	--
		500 mL	ICP-52W-5	67	ICP-52W-5-10X	168	----	--	----	--
Silver		20 mL	----	--	----	--	ICP-53N-10X-20ML		ICP-53N-25X-20ML	
	AgNO ₃	50 mL	----	--	ICP-53N-0.5-10X		----	--	----	--
	2-5% Nitric acid	100 mL	ICP-53N-1		ICP-53N-1-10X		----	--	----	--
		500 mL	ICP-53N-5		ICP-53N-5-10X		----	--	----	--
Sodium		20 mL	----	--	----	--	ICP-54N-10X-20ML	37	ICP-54N-25X-20ML	70
	NaNO ₃	50 mL	----	--	ICP-54N-0.5-10X	34	----	--	----	--
	2-5% Nitric acid	100 mL	ICP-54N-1	34	ICP-54N-1-10X	59	----	--	----	--
		500 mL	ICP-54N-5	67	ICP-54N-5-10X	175	----	--	----	--
Strontium		20 mL	----	--	----	--	ICP-55N-10X-20ML		ICP-55N-25X-20ML	
	Sr(NO ₃) ₂	50 mL	----	--	ICP-55N-0.5-10X		----	--	----	--
	2-5% Nitric acid	100 mL	ICP-55N-1		ICP-55N-1-10X		----	--	----	--
		500 mL	ICP-55N-5		ICP-55N-5-10X		----	--	----	--
Sulfur		20 mL	----	--	----	--	ICP-56W-10X-20ML	37	ICP-56W-25X-20ML	70
	(NH ₄) ₂ SO ₄	50 mL	----	--	ICP-56W-0.5-10X	32	----	--	----	--
	Water	100 mL	ICP-56W-1	34	ICP-56W-1-10X	54	----	--	----	--
		500 mL	ICP-56W-5	67	ICP-56W-5-10X	120	----	--	----	--
Tantalum		20 mL	----	--	----	--	ICP-57W-10X-20ML		ICP-57W-25X-20ML	
	Ta	50 mL	----	--	ICP-57W-0.5-10X		----	--	----	--
	Water tr. HF	100 mL	ICP-57W-1		ICP-57W-1-10X		----	--	----	--
		500 mL	ICP-57W-5		ICP-57W-5-10X		----	--	----	--

ICP

ICP Single Element Standards

Plasma Emission Spectroscopy



Element		1000 µg/mL				10,000 µg/mL				NoHaz Package (No Hazardous Charges) * 10,000 µg/mL				25,000 µg/mL	
Starting Mat'l	Unit	Cat. No.	Price	Cat. No.	Price	Cat. No.	Price	Cat. No.	Price	Cat. No.	Price	Cat. No.	Price	Cat. No.	Price
Tellurium	20 mL	----	--	----	--	ICP-58H-10X-20ML	----	----	--	----	--	----	--	----	--
Te	50 mL	----	--	ICP-58H-0.5-10X	----	----	--	----	--	----	--	----	--	----	--
10% HCl (min.)	100 mL	ICP-58H-1	----	ICP-58H-1-10X	----	----	--	----	--	----	--	----	--	----	--
	500 mL	ICP-58H-5	----	ICP-58H-5-10X	----	----	--	----	--	----	--	----	--	----	--
Terbium	20 mL	----	--	----	--	ICP-59N-10X-20ML	55	ICP-59N-25X-20ML	\$ 100	----	--	----	--	----	--
Tb ₂ O ₃	50 mL	----	--	ICP-59N-0.5-10X	69	----	--	----	--	----	--	----	--	----	--
2-5% Nitric acid	100 mL	ICP-59N-1	42	ICP-59N-1-10X	115	----	--	----	--	----	--	----	--	----	--
	500 mL	ICP-59N-5	82	ICP-59N-5-10X	315	----	--	----	--	----	--	----	--	----	--
Thallium	20 mL	----	--	----	--	ICP-60N-10X-20ML	----	ICP-60N-25X-20ML	----	----	--	----	--	----	--
Tl	50 mL	----	--	ICP-60N-0.5-10X	----	----	--	----	--	----	--	----	--	----	--
2-5% Nitric acid	100 mL	ICP-60N-1	----	ICP-60N-1-10X	----	----	--	----	--	----	--	----	--	----	--
	500 mL	ICP-60N-5	----	ICP-60N-5-10X	----	----	--	----	--	----	--	----	--	----	--
Thorium	100 mL	ICP-61N-1	34	----	----	----	--	----	--	----	--	----	--	----	--
Th(NO ₃) ₄ • 4H ₂ O	500 mL	ICP-61N-5	67	----	----	----	--	----	--	----	--	----	--	----	--
2-5% Nitric acid															
Thulium	20 mL	----	--	----	--	ICP-62N-10X-20ML	----	ICP-62N-25X-20ML	----	----	--	----	--	----	--
Tm ₂ O ₃	50 mL	----	--	ICP-62N-0.5-10X	----	----	--	----	--	----	--	----	--	----	--
2-5% Nitric acid	100 mL	ICP-62N-1	----	ICP-62N-1-10X	----	----	--	----	--	----	--	----	--	----	--
	500 mL	ICP-62N-5	----	ICP-62N-5-10X	----	----	--	----	--	----	--	----	--	----	--
Tin	50 mL	----	--	----	--	ICP-63N-10X-20ML	37	ICP-63N-25X-20ML	70	----	--	----	--	----	--
Sn	50 mL	----	--	ICP-63N-0.5-10X	42	----	--	----	--	----	--	----	--	----	--
2-5% Nitric acid tr. HF	100 mL	ICP-63N-1	34	ICP-63N-1-10X	70	----	--	----	--	----	--	----	--	----	--
	500 mL	ICP-63N-5	67	ICP-63N-5-10X	135	----	--	----	--	----	--	----	--	----	--
Tin	50 mL	----	--	----	--	ICP-63H-0.5-10X	----	----	--	----	--	----	--	----	--
Sn	100 mL	ICP-63H-1	----	ICP-63H-1-10X	----	----	--	----	--	----	--	----	--	----	--
HCl	500 mL	ICP-63H-5	----	ICP-63H-5-10X	----	----	--	----	--	----	--	----	--	----	--
Titanium	20 mL	----	--	----	--	ICP-64W-10X-20ML	37	----	--	----	--	----	--	----	--
(NH ₄) ₂ TiF ₆	50 mL	----	--	ICP-64W-0.5-10X	32	----	--	----	--	----	--	----	--	----	--
Water tr. HF	100 mL	ICP-64W-1	34	ICP-64W-1-10X	54	----	--	----	--	----	--	----	--	----	--
	500 mL	ICP-64W-5	67	ICP-64W-5-10X	120	----	--	----	--	----	--	----	--	----	--
Tungsten	20 mL	----	--	----	--	ICP-65W-10X-20ML	----	----	--	----	--	----	--	----	--
(NH ₄) ₂ WO ₄	50 mL	----	--	ICP-65W-0.5-10X	----	----	--	----	--	----	--	----	--	----	--
Water tr. NH ₄ OH	100 mL	ICP-65W-1	----	ICP-65W-1-10X	----	----	--	----	--	----	--	----	--	----	--
	500 mL	ICP-65W-5	----	ICP-65W-5-10X	----	----	--	----	--	----	--	----	--	----	--
Uranium	50 mL	----	--	----	--	----	--	----	--	----	--	----	--	----	--
U ₃ O ₈	100 mL	ICP-66N-1	42	----	----	----	--	----	--	----	--	----	--	----	--
	500 mL	ICP-66N-5	82	----	----	----	--	----	--	----	--	----	--	----	--
Vanadium	20 mL	----	--	----	--	ICP-67N-10X-20ML	----	ICP-67N-25X-20ML	----	----	--	----	--	----	--
NH ₄ VO ₃	50 mL	----	--	ICP-67N-0.5-10X	----	----	--	----	--	----	--	----	--	----	--
2-5% Nitric acid	100 mL	ICP-67N-1	----	ICP-67N-1-10X	----	----	--	----	--	----	--	----	--	----	--
	500 mL	ICP-67N-5	----	ICP-67N-5-10X	----	----	--	----	--	----	--	----	--	----	--
Ytterbium	20 mL	----	--	----	--	ICP-68N-10X-20ML	55	ICP-68N-25X-20ML	100	----	--	----	--	----	--
Yb ₂ O ₃	50 mL	----	--	ICP-68N-0.5-10X	60	----	--	----	--	----	--	----	--	----	--
2-5% Nitric acid	100 mL	ICP-68N-1	42	ICP-68N-1-10X	100	----	--	----	--	----	--	----	--	----	--
	500 mL	ICP-68N-5	82	ICP-68N-5-10X	273	----	--	----	--	----	--	----	--	----	--
Yttrium	20 mL	----	--	----	--	ICP-69N-10X-20ML	----	ICP-69N-25X-20ML	----	----	--	----	--	----	--
Y ₂ O ₃	50 mL	----	--	ICP-69N-0.5-10X	----	----	--	----	--	----	--	----	--	----	--
2-5% Nitric acid	100 mL	ICP-69N-1	----	ICP-69N-1-10X	----	----	--	----	--	----	--	----	--	----	--
	500 mL	ICP-69N-5	----	ICP-69N-5-10X	----	----	--	----	--	----	--	----	--	----	--
Zinc	20 mL	----	--	----	--	ICP-70N-10X-20ML	37	ICP-70N-25X-20ML	70	----	--	----	--	----	--
Zn	50 mL	----	--	ICP-70N-0.5-10X	32	----	--	----	--	----	--	----	--	----	--
2-5% Nitric acid	100 mL	ICP-70N-1	34	ICP-70N-1-10X	54	----	--	----	--	----	--	----	--	----	--
	500 mL	ICP-70N-5	67	ICP-70N-5-10X	120	----	--	----	--	----	--	----	--	----	--
Zirconium	20 mL	----	--	----	--	ICP-71N-10X-20ML	----	ICP-71N-25X-20ML	----	----	--	----	--	----	--
ZrO(NO ₃) ₂	50 mL	----	--	ICP-71N-0.5-10X	----	----	--	----	--	----	--	----	--	----	--
2-5% Nitric acid	100 mL	ICP-71N-1	34	ICP-71N-1-10X	----	----	--	----	--	----	--	----	--	----	--
	500 mL	ICP-71N-5	67	ICP-71N-5-10X	----	----	--	----	--	----	--	----	--	----	--

* see page 67 for details

ICP

Calibration and Matrix Blanks

Nitric Acid Blank		Hydrochloric Acid Blank		Mixed Acid Blank		Water Blank	
CLP-BLN-5	500 mL	CLP-BLH-5	500 mL	CLP-BLMA-5	500 mL	CLP-BLW-5	500 mL
CLP-BLN-L	L (2 x 500 mL)	CLP-BLH-L	L (2 x 500 mL)	CLP-BLMA-L	L (2 x 500 mL)		L (2 x 500 mL)
5% HNO ₃ in ASTM Type I Water		5% HCl in ASTM Type I Water		5% HCl + 1% HNO ₃ in ASTM Type I Water		ASTM Type I Water	



ICP/MS Single Element Standards

Plasma Emission / Mass Spectroscopy

Pure Matrix Special Packaging Traceability to NIST Reference Materials

AccuStandard's ICP/MS Standards are formulated to meet the needs of this very special instrument. As matrix effect is of utmost concern, each standard is formulated in specially purified de-ionized 18 megohm water and Parts per Trillion acids; after both wet chemical and instrumental analysis, the standards are packaged in acid leached FLPE containers to provide required protection and, of course, all standards are traceable to the National Institute of Standards and Technology (NIST) weights and Reference Materials.

Element	Matrix	Unit	100 µg/mL Conc.		1,000 µg/mL Conc.		10,000 µg/mL Conc.	
			Cat. No.	Price	Cat. No.	Price	Cat. No.	Price
Al (Aluminum)	2% HNO ₃	100 mL	ICP-MS-01N-0.01X-1		ICP-MS-01N-0.1X-1		ICP-MS-01N-1	
Sb (Antimony)	2% HNO ₃	100 mL	ICP-MS-02N-0.01X-1		ICP-MS-02N-0.1X-1		ICP-MS-02N-1	
As (Arsenic)	2% HNO ₃	100 mL	ICP-MS-03N-0.01X-1		ICP-MS-03N-0.1X-1		ICP-MS-03N-1	
Ba (Barium)	2% HNO ₃	100 mL	ICP-MS-04N-0.01X-1	34	ICP-MS-04N-0.1X-1	45	ICP-MS-04N-1	76
Be (Beryllium)	2% HNO ₃	100 mL	ICP-MS-05N-0.01X-1	34	ICP-MS-05N-0.1X-1	45	ICP-MS-05N-1	76
Bi (Bismuth)	2% HNO ₃	100 mL	ICP-MS-06N-0.01X-1	34	ICP-MS-06N-0.1X-1	45	ICP-MS-06N-1	76
Cd (Cadmium)	2% HNO ₃	100 mL	ICP-MS-08N-0.01X-1		ICP-MS-08N-0.1X-1		ICP-MS-08N-1	
Ca (Calcium)	2% HNO ₃	100 mL	ICP-MS-09N-0.01X-1		ICP-MS-09N-0.1X-1		ICP-MS-09N-1	
Cr (Chromium)	2% HNO ₃	100 mL	ICP-MS-13N-0.01X-1		ICP-MS-13N-0.1X-1		ICP-MS-13N-1	
Co (Cobalt)	2% HNO ₃	100 mL	ICP-MS-14N-0.01X-1	34	ICP-MS-14N-0.1X-1	45	ICP-MS-14N-1	76
Cu (Copper)	2% HNO ₃	100 mL	ICP-MS-15N-0.01X-1	34	ICP-MS-15N-0.1X-1	45	ICP-MS-15N-1	76
Ge (Germanium)	H ₂ O tr. HF	100 mL	ICP-MS-21W-0.01X-1	42	ICP-MS-21W-0.1X-1	53	ICP-MS-21W-1	84
Au (Gold)	10% HCl	100 mL	ICP-MS-22H-0.01X-1		ICP-MS-22H-0.1X-1		ICP-MS-22H-1	
In (Indium)	2% HNO ₃	100 mL	ICP-MS-25N-0.01X-1		ICP-MS-25N-0.1X-1		ICP-MS-25N-1	
Fe (Iron)	5% HNO ₃	100 mL	ICP-MS-27N-0.01X-1		ICP-MS-27N-0.1X-1		ICP-MS-27N-1	
Pb (Lead)	2% HNO ₃	100 mL	ICP-MS-29N-0.01X-1	34	ICP-MS-29N-0.1X-1	45	ICP-MS-29N-1	76
Li (Lithium)	2% HNO ₃	100 mL	ICP-MS-30N-0.01X-1	34	ICP-MS-30N-0.1X-1	45	ICP-MS-30N-1	76
Mg (Magnesium)	2% HNO ₃	100 mL	ICP-MS-32N-0.01X-1	34	ICP-MS-32N-0.1X-1	45	ICP-MS-32N-1	76
Mn (Manganese)	2% HNO ₃	100 mL	ICP-MS-33N-0.01X-1		ICP-MS-33N-0.1X-1		ICP-MS-33N-1	
Hg (Mercury)	10% HNO ₃	100 mL	ICP-MS-34N-0.01X-1		ICP-MS-34N-0.1X-1		ICP-MS-34N-1	
Mo (Molybdenum)	H ₂ O tr. NH ₄ OH	100 mL	ICP-MS-35W-0.01X-1		ICP-MS-35W-0.1X-1		ICP-MS-35W-1	
Ni (Nickel)	2% HNO ₃	100 mL	ICP-MS-37N-0.01X-1	34	ICP-MS-37N-0.1X-1	45	ICP-MS-37N-1	76
P (Phosphorous)	H ₂ O	100 mL	ICP-MS-41W-0.01X-1	34	ICP-MS-41W-0.1X-1	45	ICP-MS-41W-1	76
K (Potassium)	2% HNO ₃	100 mL	ICP-MS-43N-0.01X-1	34	ICP-MS-43N-0.1X-1	45	ICP-MS-43N-1	76
Rh (Rhodium)	10% HCl	100 mL	ICP-MS-46H-0.01X-1		ICP-MS-46H-0.1X-1		ICP-MS-46H-1	
Sc (Scandium)	2% HNO ₃	100 mL	ICP-MS-50N-0.01X-1		ICP-MS-50N-0.1X-1		ICP-MS-50N-1	
Se (Selenium)	2% HNO ₃	100 mL	ICP-MS-51N-0.01X-1		ICP-MS-51N-0.1X-1		ICP-MS-51N-1	
Ag (Silver)	2% HNO ₃	100 mL	ICP-MS-53N-0.01X-1	34	ICP-MS-53N-0.1X-1	45	ICP-MS-53N-1	76
Na (Sodium)	2% HNO ₃	100 mL	ICP-MS-54N-0.01X-1	34	ICP-MS-54N-0.1X-1	45	ICP-MS-54N-1	76
Sr (Strontium)	2% HNO ₃	100 mL	ICP-MS-55N-0.01X-1	34	ICP-MS-55N-0.1X-1	45	ICP-MS-55N-1	76
S (Sulphur)	H ₂ O	100 mL	ICP-MS-56W-0.01X-1		ICP-MS-56W-0.1X-1		ICP-MS-56W-1	
Tb (Terbium)	2% HNO ₃	100 mL	ICP-MS-59N-0.01X-1		ICP-MS-59N-0.1X-1		ICP-MS-59N-1	
Tl (Thallium)	2% HNO ₃	100 mL	ICP-MS-60N-0.01X-1		ICP-MS-60N-0.1X-1		ICP-MS-60N-1	
Th (Thorium)	2% HNO ₃	100 mL	ICP-MS-61N-0.01X-1	34	ICP-MS-61N-0.1X-1	45	-----	---
Sn (Tin)	2% HNO ₃ tr HF	100 mL	ICP-MS-63N-0.01X-1	34	ICP-MS-63N-0.1X-1	45	ICP-MS-63N-1	76
Ti (Titanium)	H ₂ O tr. HF	100 mL	ICP-MS-64W-0.01X-1	34	ICP-MS-64W-0.1X-1	45	ICP-MS-64W-1	76
U (Uranium)	2% HNO ₃	100 mL	ICP-MS-66N-0.01X-1		ICP-MS-66N-0.1X-1		-----	---
V (Vanadium)	2% HNO ₃	100 mL	ICP-MS-67N-0.01X-1		ICP-MS-67N-0.1X-1		ICP-MS-67N-1	
Y (Yttrium)	2% HNO ₃	100 mL	ICP-MS-69N-0.01X-1		ICP-MS-69N-0.1X-1		ICP-MS-69N-1	
Zn (Zinc)	2% HNO ₃	100 mL	ICP-MS-70N-0.01X-1		ICP-MS-70N-0.1X-1		ICP-MS-70N-1	

ICP/MS

If you need an element that is not listed above or you require a different matrix, size or concentration, our experienced chemists will provide you with a custom quotation. Get exactly what you need.

AA Single Element Standards

Atomic Absorption Spectroscopy



- Traceable to NIST Reference Materials
- Certificate of Analysis included at No Charge with each Standard
- Actual Concentration Analysis
- Most available in either Nitric or Hydrochloric acid matrix
- ISO 9001 Quality System

Each standard is prepared from high purity starting material, de-ionized water and high purity acids. Every standard is instrumentally assayed to verify concentration of specified element. Actual Lot Analysis is provided on the label and a Certificate of Analysis is included for ease of record keeping and availability at audits.

Element	Starting Mat'l	1000 µg/mL		NoHaz Package (No Hazardous Charges) *			
		Unit	1000 µg/mL	10,000 µg/mL		25,000 µg/mL	
Matrix	Unit	Cat. No.	Price	Cat. No.	Price	Cat. No.	Price
Aluminum	20 mL	----	--	AA01N-10X-20ML		AA01N-25X-20ML	
	2-5% Nitric acid	100 mL	AA01N-1	----	--	----	--
		500 mL	AA01N-5	----	--	----	--
Antimony	20 mL	----	--	AA02W-10X-20ML	20	----	--
	H ₂ O tr. HNO ₃ tr.	100 mL	AA02N-1	----	--	----	--
	Tartaric acid	500 mL	AA02N-5	----	--	----	--
Arsenic	20 mL	----	--	AA03N-10X-20ML		AA03N-25X-20ML	
	2-5% Nitric acid	100 mL	AA03N-1	----	--	----	--
		500 mL	AA03N-5	----	--	----	--
Barium	20 mL	----	--	AA04N-10X-20ML	20	AA04N-25X-20ML	37
	2-5% Nitric acid	100 mL	AA04N-1	----	--	----	--
		500 mL	AA04N-5	----	--	----	--
Beryllium	20 mL	----	--	AA05N-10X-20ML		----	--
	2-5% Nitric acid	100 mL	AA05N-1	----	--	----	--
		500 mL	AA05N-5	----	--	----	--
Bismuth	20 mL	----	--	AA06N-10X-20ML	20	AA06N-25X-20ML	37
	2-5% Nitric acid	100 mL	AA06N-1	----	--	----	--
		500 mL	AA06N-5	----	--	----	--
Boron	20 mL	----	--	AA07W-10X-20ML		----	--
	Water tr. NH ₄ OH	100 mL	AA07W-1	----	--	----	--
		500 mL	AA07W-5	----	--	----	--
Cadmium	20 mL	----	--	AA08N-10X-20ML	20	AA08N-25X-20ML	37
	2-5% Nitric acid	100 mL	AA08N-1	----	--	----	--
		500 mL	AA08N-5	----	--	----	--
Calcium	20 mL	----	--	AA09N-10X-20ML		AA09N-25X-20ML	
	2-5% Nitric acid	100 mL	AA09N-1	----	--	----	--
		500 mL	AA09N-5	----	--	----	--
Cerium	20 mL	----	--	AA11N-10X-20ML	20	AA11N-25X-20ML	45
	2-5% Nitric acid	100 mL	AA11N-1	----	--	----	--
		500 mL	AA11N-5	----	--	----	--
Cesium	20 mL	----	--	AA12N-10X-20ML		AA12N-25X-20ML	
	2-5% Nitric acid	100 mL	AA12N-1	----	--	----	--
		500 mL	AA12N-5	----	--	----	--
Chromium	20 mL	----	--	AA13N-10X-20ML	20	AA13N-25X-20ML	37
	2-5% Nitric acid	100 mL	AA13N-1	----	--	----	--
		500 mL	AA13N-5	----	--	----	--
Cobalt	20 mL	----	--	AA14N-10X-20ML		AA14N-25X-20ML	
	2-5% Nitric acid	100 mL	AA14N-1	----	--	----	--
		500 mL	AA14N-5	----	--	----	--
Copper	20 mL	----	--	AA15N-10X-20ML	20	AA15N-25X-20ML	37
	2-5% Nitric acid	100 mL	AA15N-1	----	--	----	--
		500 mL	AA15N-5	----	--	----	--
Dysprosium	20 mL	----	--	AA16N-10X-20ML		AA16N-25X-20ML	
	2-5% Nitric acid	100 mL	AA16N-1	----	--	----	--
		500 mL	AA16N-5	----	--	----	--
Erbium	20 mL	----	--	AA17N-10X-20ML	35	AA17N-25X-20ML	60
	2-5% Nitric acid	100 mL	AA17N-1	----	--	----	--
		500 mL	AA17N-5	----	--	----	--
Europium	20 mL	----	--	AA18N-10X-20ML		AA18N-25X-20ML	
	2-5% Nitric acid	100 mL	AA18N-1	----	--	----	--
		500 mL	AA18N-5	----	--	----	--
Gadolinium	20 mL	----	--	AA19N-10X-20ML	35	AA19N-25X-20ML	60
	2-5% Nitric acid	100 mL	AA19N-1	----	--	----	--
		500 mL	AA19N-5	----	--	----	--
Gallium	20 mL	----	--	AA20N-10X-20ML		----	--
	2-5% Nitric acid	100 mL	AA20N-1	----	--	----	--
		500 mL	AA20N-5	----	--	----	--
Germanium	20 mL	----	--	AA21W-10X-20ML	35	----	--
	Water tr. HF	100 mL	AA21W-1	----	--	----	--
		500 mL	AA21W-5	----	--	----	--
Gold	20 mL	----	--	AA22H-10X-20ML		AA22H-25X-20ML	
	10% HCl (min.)	100 mL	AA22H-1	----	--	----	--
		500 mL	AA22H-5	----	--	----	--

* see page 67 for details

For your convenience these elements are also available in Other Matrices. Contact Technical Service for more info

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Element	Starting Mat'l	1000 µg/mL		NoHaz Package (No Hazardous Charges) *			
		Unit	Cat. No.	Price	10,000 µg/mL		25,000 µg/mL
Matrix	Unit	Cat. No.	Price	Cat. No.	Price	Cat. No.	Price
Hafnium	20 mL	-----	--	AA23N-10X-20ML	--	AA23N-25X-20ML	--
	2-5% Nitric acid tr. HF	100 mL	AA23N-1	-----	--	-----	--
	500 mL	AA23N-5	-----	-----	--	-----	--
Holmium	20 mL	-----	--	AA24N-10X-20ML	35	AA24N-25X-20ML	60
	2-5% Nitric acid	100 mL	AA24N-1	20	-----	-----	--
	500 mL	AA24N-5	45	-----	--	-----	--
Indium	20 mL	-----	--	AA25N-10X-20ML	--	AA25N-25X-20ML	--
	2-5% Nitric acid	100 mL	AA25N-1	-----	--	-----	--
	500 mL	AA25N-5	-----	-----	--	-----	--
Iridium	20 mL	-----	--	AA26H-10X-20ML	70	AA26H-25X-20ML	165
	10% HCl (min.)	100 mL	AA26H-1	65	-----	-----	--
	500 mL	AA26H-5	150	-----	--	-----	--
Iron	20 mL	-----	--	AA27N-10X-20ML	--	AA27N-25X-20ML	--
	2-5% Nitric acid	100 mL	AA27N-1	-----	--	-----	--
	500 mL	AA27N-5	-----	-----	--	-----	--
Lanthanum	20 mL	-----	--	AA28N-10X-20ML	20	AA28N-25X-20ML	37
	2-5% Nitric acid	100 mL	AA28N-1	15	-----	-----	--
	500 mL	AA28N-5	36	-----	--	-----	--
Lead	20 mL	-----	--	AA29N-10X-20ML	--	AA29N-25X-20ML	--
	2-5% Nitric acid	100 mL	AA29N-1	-----	--	-----	--
	500 mL	AA29N-5	-----	-----	--	-----	--
Lithium	20 mL	-----	--	AA30N-10X-20ML	20	AA30N-25X-20ML	37
	2-5% Nitric acid	100 mL	AA30N-1	12	-----	-----	--
	500 mL	AA30N-5	30	-----	--	-----	--
Lutetium	20 mL	-----	--	AA31N-10X-20ML	--	AA31N-25X-20ML	--
	2-5% Nitric acid	100 mL	AA31N-1	-----	--	-----	--
	500 mL	AA31N-5	-----	-----	--	-----	--
Magnesium	20 mL	-----	--	AA32N-10X-20ML	20	AA32N-25X-20ML	37
	2-5% Nitric acid	100 mL	AA32N-1	12	-----	-----	--
	500 mL	AA32N-5	30	-----	--	-----	--
Manganese	20 mL	-----	--	AA33N-10X-20ML	--	AA33N-25X-20ML	--
	2-5% Nitric acid	100 mL	AA33N-1	-----	--	-----	--
	500 mL	AA33N-5	-----	-----	--	-----	--
Mercury	20 mL	-----	--	AA34N-10X-20ML	20	AA34N-25X-20ML	37
	10% Nitric acid	100 mL	AA34N-1	13	-----	-----	--
	500 mL	AA34N-5	33	-----	--	-----	--
Molybdenum	20 mL	-----	--	AA35W-10X-20ML	--	AA35W-25X-20ML	--
	Water tr. NH4OH	100 mL	AA35W-1	-----	--	-----	--
	500 mL	AA35W-5	-----	-----	--	-----	--
Neodymium	20 mL	-----	--	AA36N-10X-20ML	25	AA36N-25X-20ML	50
	2-5% Nitric acid	100 mL	AA36N-1	20	-----	-----	--
	500 mL	AA36N-5	45	-----	--	-----	--
Nickel	20 mL	-----	--	AA37N-10X-20ML	--	AA37N-25X-20ML	--
	2-5% Nitric acid	100 mL	AA37N-1	-----	--	-----	--
	500 mL	AA37N-5	-----	-----	--	-----	--
Niobium	20 mL	-----	--	AA38W-10X-20ML	20	AA38W-25X-20ML	37
	Water tr. HF	100 mL	AA38W-1	15	-----	-----	--
	500 mL	AA38W-5	36	-----	--	-----	--
Palladium	20 mL	-----	--	AA40H-10X-20ML	--	AA40H-25X-20ML	--
	10% HCl (min.)	100 mL	AA40H-1	-----	--	-----	--
	500 mL	AA40H-5	-----	-----	--	-----	--
Phosphorus	20 mL	-----	--	AA41W-10X-20ML	20	-----	--
	Water	100 mL	AA41W-1	13	-----	-----	--
	500 mL	AA41W-5	33	-----	--	-----	--
Platinum	20 mL	-----	--	AA42H-10X-20ML	--	AA42H-25X-20ML	--
	10% HCl (min.)	100 mL	AA42H-1	-----	--	-----	--
	500 mL	AA42H-5	-----	-----	--	-----	--
Potassium	20 mL	-----	--	AA43N-10X-20ML	20	AA43N-25X-20ML	37
	2-5% Nitric acid	100 mL	AA43N-1	12	-----	-----	--
	500 mL	AA43N-5	30	-----	--	-----	--
Praseodymium	20 mL	-----	--	AA44N-10X-20ML	--	AA44N-25X-20ML	--
	2-5% Nitric acid	100 mL	AA44N-1	-----	--	-----	--
	500 mL	AA44N-5	-----	-----	--	-----	--
Rhenium	20 mL	-----	--	AA45W-10X-20ML	80	AA45W-25X-20ML	175
	Water	100 mL	AA45W-1	65	-----	-----	--
	500 mL	AA45W-5	150	-----	--	-----	--
Rhodium	20 mL	-----	--	AA46H-10X-20ML	--	AA46H-25X-20ML	--
	10% HCl (min.)	100 mL	AA46H-1	-----	--	-----	--
	500 mL	AA46H-5	-----	-----	--	-----	--
Rubidium	20 mL	-----	--	AA47N-10X-20ML	20	AA47N-25X-20ML	37
	2-5% Nitric acid	100 mL	AA47N-1	15	-----	-----	--
	500 mL	AA47N-5	36	-----	--	-----	--
Ruthenium	20 mL	-----	--	AA48H-10X-20ML	--	AA48H-25X-20ML	--
	10% HCl	100 mL	AA48H-1	-----	--	-----	--
	500 mL	AA48H-5	-----	-----	--	-----	--

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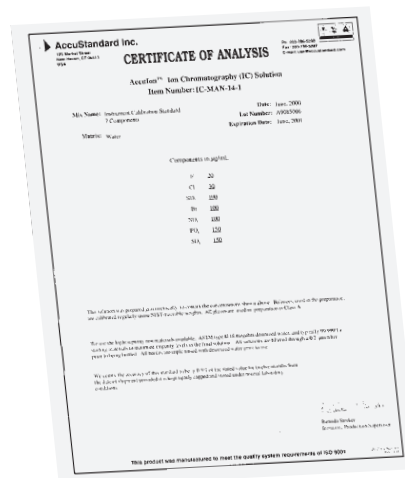
Element	Starting Mat'l	Unit	1000 µg/mL		NoHaz Package (No Hazardous Charges) *			
			Cat. No.	Price	10,000 µg/mL		25,000 µg/mL	
Matrix					Cat. No.	Price	Cat. No.	Price
Samarium		20 mL	-----	--	AA49N-10X-20ML		AA49N-25X-20ML	
2-5% Nitric acid		100 mL	AA49N-1		-----	--	-----	--
		500 mL	AA49N-5		-----	--	-----	--
Scandium		20 mL	-----	--	AA50N-10X-20ML	75	AA50N-25X-20ML	160
2-5% Nitric acid		100 mL	AA50N-1	62	-----	--	-----	--
		500 mL	AA50N-5	145	-----	--	-----	--
Selenium		20 mL	-----	--	AA51N-10X-20ML		AA51N-25X-20ML	
2-5% Nitric acid		100 mL	AA51N-1		-----	--	-----	--
		500 mL	AA51N-5		-----	--	-----	--
Silicon		20 mL	-----	--	AA-52W-10X-20ML	20	-----	--
Water tr. HF		100 mL	AA52W-1	13	-----	--	-----	--
		500 mL	AA52W-5	33	-----	--	-----	--
Silver		20 mL	-----	--	AA53N-10X-20ML		AA53N-25X-20ML	
2-5% Nitric acid		100 mL	AA53N-1		-----	--	-----	--
		500 mL	AA53N-5		-----	--	-----	--
Sodium		20 mL	-----	--	AA54N-10X-20ML	20	AA54N-25X-20ML	37
2-5% Nitric acid		100 mL	AA54N-1	13	-----	--	-----	--
		500 mL	AA54N-5	33	-----	--	-----	--
Strontium		20 mL	-----	--	AA55N-10X-20ML		AA55N-25X-20ML	
2-5% Nitric acid		100 mL	AA55N-1		-----	--	-----	--
		500 mL	AA55N-5		-----	--	-----	--
Sulfur		20 mL	-----	--	AA56W-10X-20ML	20	AA56W-25X-20ML	37
Water		100 mL	AA56W-1	15	-----	--	-----	--
		500 mL	AA56W-5	35	-----	--	-----	--
Tantalum		20 mL	-----	--	AA57W-10X-20ML		AA57W-25X-20ML	
Water tr. HF		100 mL	AA57W-1		-----	--	-----	--
		500 mL	AA57W-5		-----	--	-----	--
Tellurium		20 mL	-----	--	AA58H-10X-20ML	20	-----	--
10% HCl (min.)		100 mL	AA58H-1	15	-----	--	-----	--
		500 mL	AA58H-5	35	-----	--	-----	--
Terbium		20 mL	-----	--	AA59N-10X-20ML		AA59N-25X-20ML	
2-5% Nitric acid		100 mL	AA59N-1		-----	--	-----	--
		500 mL	AA59N-5		-----	--	-----	--
Thallium		20 mL	-----	--	AA60N-10X-20ML	20	AA60N-25X-20ML	37
2-5% Nitric acid		100 mL	AA60N-1	15	-----	--	-----	--
		500 mL	AA60N-5	35	-----	--	-----	--
Thorium		20 mL	-----	--	-----	--	-----	--
		100 mL	AA61N-1		-----	--	-----	--
2-5% Nitric acid		500 mL	AA61N-5		-----	--	-----	--
Thulium		20 mL	-----	--	AA62N-10X-20ML	65	AA62N-25X-20ML	150
2-5% Nitric acid		100 mL	AA62N-1	60	-----	--	-----	--
		500 mL	AA62N-5	135	-----	--	-----	--
Tin		20 mL	-----	--	AA63N-10X-20ML		AA63N-25X-20ML	
2-5% Nitric acid tr. HF		100 mL	AA63N-1		-----	--	-----	--
		500 mL	AA63N-5		-----	--	-----	--
Titanium		20 mL	-----	--	AA64W-10X-20ML	20	-----	--
Water tr. HF		100 mL	AA64W-1	13	-----	--	-----	--
		500 mL	AA64W-5	33	-----	--	-----	--
Tungsten		20 mL	-----	--	AA65W-10X-20ML		-----	--
Water tr. NH4OH		100 mL	AA65W-1		-----	--	-----	--
		500 mL	AA65W-5		-----	--	-----	--
Uranium		20 mL	-----	--	-----	--	-----	--
2-5% Nitric acid		100 mL	AA66N-1	15	-----	--	-----	--
		500 mL	AA66N-5	35	-----	--	-----	--
Vanadium		20 mL	-----	--	AA67N-10X-20ML		AA67N-25X-20ML	
2-5% Nitric acid		100 mL	AA67N-1		-----	--	-----	--
		500 mL	AA67N-5		-----	--	-----	--
Ytterbium		20 mL	-----	--	AA68N-10X-20ML	35	AA68N-25X-20ML	60
2-5% Nitric acid		100 mL	AA68N-1	20	-----	--	-----	--
		500 mL	AA68N-5	45	-----	--	-----	--
Yttrium		20 mL	-----	--	AA69N-10X-20ML		AA69N-25X-20ML	
2-5% Nitric acid		100 mL	AA69N-1		-----	--	-----	--
		500 mL	AA69N-5		-----	--	-----	--
Zinc		20 mL	-----	--	AA70N-10X-20ML	20	AA70N-25X-20ML	37
2-5% Nitric acid		100 mL	AA70N-1	13	-----	--	-----	--
		500 mL	AA70N-5	33	-----	--	-----	--
Zirconium		20 mL	-----	--	AA71N-10X-20ML		AA71N-25X-20ML	
2-5% Nitric acid		100 mL	AA71N-1		-----	--	-----	--
		500 mL	AA71N-5		-----	--	-----	--

AA

Ion Chromatography Anion Singles

IC

- 99.999% High Purity Starting Materials
- 18 Megohm, ASTM type 1 Water
- Packaged in pre-cleaned high quality HDPE bottles
- Each Standard is Supplied with a Certificate of Analysis, stating traceability to NIST, certified value and expiration date
- Final Solution is filtered through a 0.2 µm filter to eliminate contaminants (such as suspended solids and microbes). This extends shelf life and protects your column.
- Ready-To-Use Mixes and Calibration Sets
- Standards may be used for other "Classical or Wet" methods
- Most Complete Product Line
- "The Right Size" allows you to purchase as much or as little as you need - minimizing waste, and assuring Fresh Solution when you need it most
- Next Day Delivery on request



Used for Influent & Effluent monitoring in aqueous matrices by ASTM & other EPA Methods in the Petrochemical Industry

Ion Chrom - Anion Singles (Water Matrix)

Symbol (Element)	Unit	Anion Conc. 100 µg/mL	Price	Anion Conc. 200 µg/mL	Price	Anion Conc. 1000 µg/mL	Price
F (Fluoride)	100 mL	IC-F-1X-1		IC-F-2X-1		IC-F-10X-1	
	500 mL	IC-F-1X-5		IC-F-2X-5		IC-F-10X-5	
Cl (Chloride)	100 mL	IC-Cl-1X-1		IC-Cl-2X-1		IC-Cl-10X-1	
	500 mL	IC-Cl-1X-5		IC-Cl-2X-5		IC-Cl-10X-5	
NO ₂ (Nitrite)	100 mL	IC-NO2-1X-1		IC-NO2-2X-1		IC-NO2-10X-1	
	500 mL	IC-NO2-1X-5		IC-NO2-2X-5		IC-NO2-10X-5	
NO ₃ (Nitrate)	100 mL	IC-NO3-1X-1		IC-NO3-2X-1		IC-NO3-10X-1	
	500 mL	IC-NO3-1X-5		IC-NO3-2X-5		IC-NO3-10X-5	
Br (Bromide)	100 mL	IC-BR-1X-1		IC-BR-2X-1		IC-BR-10X-1	
	500 mL	IC-BR-1X-5		IC-BR-2X-5		IC-BR-10X-5	
PO ₄ (Phosphate)	100 mL	IC-PO4-1X-1		IC-PO4-2X-1		IC-PO4-10X-1	
	500 mL	IC-PO4-1X-5		IC-PO4-2X-5		IC-PO4-10X-5	
SO ₄ (Sulfate)	100 mL	IC-SO4-1X-1		IC-SO4-2X-1		IC-SO4-10X-1	
	500 mL	IC-SO4-1X-5		IC-SO4-2X-5		IC-SO4-10X-5	

Ion Chrom - Anion Kits (Water Matrix)

	Unit	Anion Conc. 100 µg/mL	Kit Price	Anion Conc. 200 µg/mL	Kit Price	Anion Conc. 1000 µg/mL	Kit Price
Kit Price SAVE 25% Kit = one bottle of each analyte	100 mL	IC-AN-KIT-1X-1		IC-AN-KIT-2X-1		IC-AN-KIT-10X-1	
		7 x 100 mL IC-F-1X-1 IC-Cl-1X-1 IC-NO2-1X-1 IC-NO3-1X-1 IC-BR-1X-1 IC-PO4-1X-1 IC-SO4-1X-1		7 x 100 mL IC-F-2X-1 IC-Cl-2X-1 IC-NO2-2X-1 IC-NO3-2X-1 IC-BR-2X-1 IC-PO4-2X-1 IC-SO4-2X-1		7 x 100 mL IC-F-10X-1 IC-Cl-10X-1 IC-NO2-10X-1 IC-NO3-10X-1 IC-BR-10X-1 IC-PO4-10X-1 IC-SO4-10X-1	
Kit Price SAVE 25% Kit = one bottle of each analyte	500 mL	IC-AN-KIT-1X-5		IC-AN-KIT-2X-5		IC-AN-KIT-10X-5	
		7 x 500 mL IC-F-1X-5 IC-Cl-1X-5 IC-NO2-1X-5 IC-NO3-1X-5 IC-BR-1X-5 IC-PO4-1X-5 IC-SO4-1X-5		7 x 500 mL IC-F-2X-5 IC-Cl-2X-5 IC-NO2-2X-5 IC-NO3-2X-5 IC-BR-2X-5 IC-PO4-2X-5 IC-SO4-2X-5		7 x 500 mL IC-F-10X-5 IC-Cl-10X-5 IC-NO2-10X-5 IC-NO3-10X-5 IC-BR-10X-5 IC-PO4-10X-5 IC-SO4-10X-5	

Ion Chromatography Anion Mixtures

IC

Anion Mixes Ion Chrom Standards

Anion Mix #1

IC-MAN-01-1	100 mL
Water Matrix	5 comps.
F (Fluoride)	20 µg/mL
Cl (Chloride)	30 µg/mL
NO ₃ (Nitrate)	100 µg/mL
PO ₄ (Phosphate)	150 µg/mL
SO ₄ (Sulfate)	150 µg/mL

Anion Mix #2

IC-MAN-02-1	100 mL
Water Matrix	6 comps.
F (Fluoride)	100 µg/mL
Cl (Chloride)	200 µg/mL
Br (Bromide)	400 µg/mL
NO ₃ (Nitrate)	400 µg/mL
PO ₄ (Phosphate)	600 µg/mL
SO ₄ (Sulfate)	400 µg/mL

Anion Mix #3

IC-MAN-03-1	100 mL
Water Matrix	3 comps.
F (Fluoride)	100 µg/mL
Cl (Chloride)	100 µg/mL
SO ₄ (Sulfate)	100 µg/mL

Anion Mix #4

IC-MAN-04-1	100 mL
Water Matrix	6 comps.
F (Fluoride)	100 µg/mL
Cl (Chloride)	100 µg/mL
Br (Bromide)	100 µg/mL
NO ₃ (Nitrate)	100 µg/mL
PO ₄ (Phosphate)	100 µg/mL
SO ₄ (Sulfate)	100 µg/mL

Anion Mix #5

IC-MAN-05-SET	2 x 100 mL
IC-MAN-05-R1-1	100 mL
Water Matrix	6 comps.
F (Fluoride)	10 µg/mL
Cl (Chloride)	20 µg/mL
Br (Bromide)	20 µg/mL
NO ₃ (Nitrate)	20 µg/mL
PO ₄ (Phosphate)	5 µg/mL
SO ₄ (Sulfate)	30 µg/mL
IC-NO2-0.2X-1	100 mL
NO ₂ (Nitrite)	20 µg/mL

Anion Mix #6

IC-MAN-06-SET	2 x 100 mL
IC-MAN-06-R1-1	100 mL
Water Matrix	6 comps.
F (Fluoride)	1 µg/mL
Cl (Chloride)	5 µg/mL
Br (Bromide)	5 µg/mL
NO ₃ (Nitrate)	5 µg/mL
PO ₄ (Phosphate)	5 µg/mL
SO ₄ (Sulfate)	10 µg/mL
IC-NO2-0.05X-1	100 mL
NO ₂ (Nitrite)	5 µg/mL

Technical Note

In order to enhance the shelf life & long term stability of our IC products. AccuStandard has split the Nitrite out of mixes that contain Nitrate.

Anion Mix #7

IC-MAN-07-SET	2 x 100 mL
IC-MAN-07-R1-1	100 mL
Water Matrix	6 comps.
F (Fluoride)	1 µg/mL
Cl (Chloride)	10 µg/mL
Br (Bromide)	10 µg/mL
NO ₃ (Nitrate)	10 µg/mL
PO ₄ (Phosphate)	10 µg/mL
SO ₄ (Sulfate)	10 µg/mL
IC-NO2-0.1X-1	100 mL
NO ₂ (Nitrite)	10 µg/mL

Anion Mix #8

IC-MAN-08-SET	2 x 100 mL
IC-MAN-08-R1-1	100 mL
Water Matrix	6 comps.
F (Fluoride)	10 µg/mL
Cl (Chloride)	20 µg/mL
Br (Bromide)	20 µg/mL
NO ₃ (Nitrate)	20 µg/mL
PO ₄ (Phosphate)	20 µg/mL
SO ₄ (Sulfate)	20 µg/mL
IC-NO2-0.2X-1	100 mL
NO ₂ (Nitrite)	20 µg/mL

Anion Mix #9

IC-MAN-09-SET	2 x 100 mL
IC-MAN-09-R1-1	100 mL
Water Matrix	6 comps.
F (Fluoride)	20 µg/mL
Cl (Chloride)	40 µg/mL
Br (Bromide)	40 µg/mL
NO ₃ (Nitrate)	40 µg/mL
PO ₄ (Phosphate)	40 µg/mL
SO ₄ (Sulfate)	40 µg/mL
IC-NO2-0.4X-1	100 mL
NO ₂ (Nitrite)	40 µg/mL

Anion Mix #10

IC-MAN-10-SET	2 x 100 mL
IC-MAN-10-R1-1	100 mL
Water Matrix	6 comps.
F (Fluoride)	25 µg/mL
Cl (Chloride)	50 µg/mL
Br (Bromide)	50 µg/mL
NO ₃ (Nitrate)	50 µg/mL
PO ₄ (Phosphate)	50 µg/mL
SO ₄ (Sulfate)	50 µg/mL
IC-NO2-0.5X-1	100 mL
NO ₂ (Nitrite)	50 µg/mL

IC-MAN-CAL-SET 9 x 100 mL

Contains one each of:

CLP-BLW-5 (500 mL)	
IC-MAN-07-SET	IC-MAN-09-SET
IC-MAN-08-SET	IC-MAN-10-SET

Technical Note

This Ready-to-Use set of standards can be used to generate a 5 point calibration curve (including blank).

Anion Mix #11

IC-MAN-11-1	100 mL
Water Matrix	5 comps.
Cl (Chloride)	1000 µg/mL
Br (Bromide)	1000 µg/mL
NO ₃ (Nitrate)	1000 µg/mL
PO ₄ (Phosphate)	1000 µg/mL
SO ₄ (Sulfate)	1000 µg/mL

Anion Mix #12

IC-MAN-12-1	100 mL
Water Matrix	5 comps.
Cl (Chloride)	15 µg/mL
Br (Bromide)	15 µg/mL
NO ₃ (Nitrate)	15 µg/mL
PO ₄ (Phosphate)	15 µg/mL
SO ₄ (Sulfate)	15 µg/mL

Anion Mix #13

IC-MAN-13-1	100 mL
Water Matrix	3 comps.
F (Fluoride)	25 µg/mL
Cl (Chloride)	50 µg/mL
SO ₄ (Sulfate)	100 µg/mL

Anion Mix #14

IC-MAN-14-SET	2 x 100 mL
IC-MAN-14-R3-1	100 mL
Water Matrix	6 comps.
F (Fluoride)	20 µg/mL
Cl (Chloride)	30 µg/mL
NO ₃ (Nitrate)	100 µg/mL
Br (Bromide)	100 µg/mL
PO ₄ (Phosphate)	150 µg/mL
SO ₄ (Sulfate)	150 µg/mL
IC-NO2-1X-1	100 mL
NO ₂ (Nitrite)	100 µg/mL

**IC-MAN-14-R2-SET is perfect for
US EPA Method 300.0**

Anion Mix #14 Revised

IC-MAN-14-R2-SET	2 x 100 mL
IC-MAN-14-R2-1	100 mL
Water Matrix	6 comps.
F (Fluoride)	20 µg/mL
Cl (Chloride)	30 µg/mL
Br (Bromide)	100 µg/mL
N-NO ₃ (Nitrogen-Nitrate)	100 µg/mL
P-PO ₄ (Phosphorus-Phosphate)	150 µg/mL
SO ₄ (Sulfate)	150 µg/mL
IC-NO2-N-1X-1	100 mL
N-NO ₂ (Nitrogen-Nitrite)	100 µg/mL

Anion Mix #15

IC-MAN-15R-SET	2 x 100 mL
IC-MAN-15-R2-1	100 mL
Water Matrix	3 comps.
F (Fluoride)	100 µg/mL
NO ₃ (Nitrate)	100 µg/mL
PO ₄ (Phosphate)	100 µg/mL
IC-NO2-1X-1	100 mL
NO ₂ (Nitrite)	100 µg/mL

Anion Mix #16

IC-MAN-16-SET	2 x 100 mL
IC-MAN-16-R1-1	100 mL
Water Matrix	6 comps.
F (Fluoride)	100 µg/mL
Cl (Chloride)	200 µg/mL
Br (Bromide)	100 µg/mL
NO ₃ (Nitrate)	20 µg/mL
PO ₄ (Phosphate)	30 µg/mL
SO ₄ (Sulfate)	20 µg/mL
IC-NO2-0.4X-1	100 mL
NO ₂ (Nitrite)	40 µg/mL

Anion Mix #17

IC-MAN-17-SET	2 x 100 mL
IC-MAN-17-R1-1	100 mL
Water Matrix	5 comps.
Cl (Chloride)	20 µg/mL
Br (Bromide)	12 µg/mL
NO ₃ (Nitrate)	12 µg/mL
PO ₄ (Phosphate)	12 µg/mL
SO ₄ (Sulfate)	80 µg/mL
IC-NO2-0.12X-1	100 mL
NO ₂ (Nitrite)	12 µg/mL

Anion Mix #18

IC-MAN-18-SET	2 x 100 mL
IC-MAN-18-R1-1	100 mL
Water Matrix	5 comps.
F (Fluoride)	100 µg/mL
Cl (Chloride)	100 µg/mL
NO ₃ (Nitrate)	100 µg/mL
PO ₄ (Phosphate)	100 µg/mL
SO ₄ (Sulfate)	100 µg/mL
IC-NO2-1X-1	100 mL
NO ₂ (Nitrite)	100 µg/mL

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Ion Chromatography

IC

Used for Influent & Effluent monitoring in aqueous matrices by ASTM & other EPA Methods in the Petrochemical Industry

Ion Chrom - Cation Singles (Dilute HNO₃ Matrix)

Symbol (Element)	Unit	100 µg/mL	Price	200 µg/mL	Price	1000 µg/mL	Price
Ca (Calcium)	100 mL	IC-CA-1X-1		IC-CA-2X-1		IC-CA-10X-1	
	500 mL	IC-CA-1X-5		IC-CA-2X-5		IC-CA-10X-5	
NH ₄ (Ammonium)	100 mL	IC-NH4-1X-1		IC-NH4-2X-1		IC-NH4-10X-1 *	
	500 mL	IC-NH4-1X-5		IC-NH4-2X-5		IC-NH4-10X-5 *	
Mg (Magnesium)	100 mL	IC-MG-1X-1		IC-MG-2X-1		IC-MG-10X-1	
	500 mL	IC-MG-1X-5		IC-MG-2X-5		IC-MG-10X-5	
K (Potassium)	100 mL	IC-K-1X-1		IC-K-2X-1		IC-K-10X-1	
	500 mL	IC-K-1X-5		IC-K-2X-5		IC-K-10X-5	
Na (Sodium)	100 mL	IC-NA-1X-1		IC-NA-2X-1		IC-NA-10X-1	
	500 mL	IC-NA-1X-5		IC-NA-2X-5		IC-NA-10X-5	
Li (Lithium)	100 mL	IC-LI-1X-1		IC-LI-2X-1		IC-LI-10X-1	
	500 mL	IC-LI-1X-5		IC-LI-2X-5		IC-LI-10X-5	
Ba (Barium)	100 mL	IC-BA-1X-1		IC-BA-2X-1		IC-BA-10X-1	
	500 mL	IC-BA-1X-5		IC-BA-2X-5		IC-BA-10X-5	
Sr (Strontium)	100 mL	IC-SR-1X-1		IC-SR-2X-1		IC-SR-10X-1	
	500 mL	IC-SR-1X-5		IC-SR-2X-5		IC-SR-10X-5	

* These Standards are 1,000 µg/mL as Ammonium (NH₄)
Other Nitrogen species equivalents are: NH₃ (Ammonia) = 944 µg/mL N (Nitrogen) = 776 µg/mL

Ion Chrom - Cation Kits (Dilute HNO₃ Matrix)

	Unit	100 µg/mL	Price	200 µg/mL	Price	1000 µg/mL	Price
Kit Price SAVE 25% Kit = one bottle of each analyte	100 mL	IC-CAT-KIT-1X-1		IC-CAT-KIT-2X-1		IC-CAT-KIT-10X-1	
		8 x 100 mL IC-CA-1X-1 IC-NH4-1X-1 IC-MG-1X-1 IC-K-1X-1 IC-NA-1X-1 IC-LI-1X-1 IC-BA-1X-1 IC-SR-1X-1		8 x 100 mL IC-CA-2X-1 IC-NH4-2X-1 IC-MG-2X-1 IC-K-2X-1 IC-NA-2X-1 IC-LI-2X-1 IC-BA-2X-1 IC-SR-2X-1		8 x 100 mL IC-CA-10X-1 IC-NH4-10X-1 IC-MG-10X-1 IC-K-10X-1 IC-NA-10X-1 IC-LI-10X-1 IC-BA-10X-1 IC-SR-10X-1	
Kit Price SAVE 25% Kit = one bottle of each analyte	500 mL	IC-CAT-KIT-1X-5		IC-CAT-KIT-2X-5		IC-CAT-KIT-10X-5	
		8 x 500 mL IC-CA-1X-5 IC-NH4-1X-5 IC-MG-1X-5 IC-K-1X-5 IC-NA-1X-5 IC-LI-1X-5 IC-BA-1X-5 IC-SR-1X-5		8 x 500 mL IC-CA-2X-5 IC-NH4-2X-5 IC-MG-2X-5 IC-K-2X-5 IC-NA-2X-5 IC-LI-2X-5 IC-BA-2X-5 IC-SR-2X-5		8 x 500 mL IC-CA-10X-5 IC-NH4-10X-5 IC-MG-10X-5 IC-K-10X-5 IC-NA-10X-5 IC-LI-10X-5 IC-BA-10X-5 IC-SR-10X-5	

Cation Mixes

Ion Chrom Standards

<p>Cation Mix #1</p> <p>IC-MCA-01-1 100 mL Dilute HNO₃ 6 comps.</p> <p>Ca (Calcium) 1000 µg/mL NH₄ (Ammonium) 400 µg/mL Mg (Magnesium) 200 µg/mL</p> <p>K (Potassium) 200 µg/mL Na (Sodium) 200 µg/mL Li (Lithium) 50 µg/mL</p>	<p>Cation Mix #3</p> <p>IC-MCA-03-1 100 mL Dilute HNO₃ 4 comps.</p> <p>Ca (Calcium) 100 µg/mL NH₄ (Ammonium) 100 µg/mL Na (Sodium) 50 µg/mL Li (Lithium) 10 µg/mL</p>	<p>Cation Mix #5</p> <p>IC-MCA-05-1 100 mL Dilute HNO₃ 4 comps.</p> <p>NH₄ (Ammonium) 3 µg/mL K (Potassium) 6 µg/mL Na (Sodium) 3 µg/mL Li (Lithium) 0.5 µg/mL</p>
<p>Cation Mix #2</p> <p>IC-MCA-02-1 100 mL Dilute HNO₃ 6 comps.</p> <p>Ca (Calcium) 100 µg/mL NH₄ (Ammonium) 100 µg/mL Mg (Magnesium) 100 µg/mL</p> <p>K (Potassium) 100 µg/mL Na (Sodium) 100 µg/mL Li (Lithium) 100 µg/mL</p>	<p>Cation Mix #4</p> <p>IC-MCA-04-1 100 mL Dilute HNO₃ 4 comps.</p> <p>Ca (Calcium) 400 µg/mL Mg (Magnesium) 200 µg/mL Ba (Barium) 1600 µg/mL Sr (Strontium) 600 µg/mL</p>	<p>Cation Mix #6</p> <p>IC-MCA-06-1 100 mL Dilute HNO₃ 6 comps.</p> <p>Ca (Calcium) 2 µg/mL NH₄ (Ammonium) 1.5 µg/mL Mg (Magnesium) 2 µg/mL</p> <p>K (Potassium) 2.5 µg/mL Na (Sodium) 1.5 µg/mL Li (Lithium) 0.2 µg/mL</p>

IC

Ion Chromatography

IC

Ion Chrom Eluents

0.5 M Sodium bicarbonate (100X concentrate)	50 mL IC-ELU-01-0.5	100 mL IC-ELU-01-1	5 x 50 mL IC-ELU-01-0.5-PAK	5 x 100 mL IC-ELU-01-1-PAK
0.5 M Sodium carbonate (100X concentrate)	50 mL IC-ELU-02-0.5	100 mL IC-ELU-02-1	5 x 50 mL IC-ELU-02-0.5-PAK	5 x 100 mL IC-ELU-02-1-PAK
0.18 M Sodium carbonate/ 0.17 M Sodium bicarbonate (100X concentrate)	50 mL IC-ELU-03-0.5	100 mL IC-ELU-03-1	5 x 50 mL IC-ELU-03-0.5-PAK	5 x 100 mL IC-ELU-03-1-PAK

Easy to use, ready to dilute concentrates. Open a fresh bottle and dilute the volume (50 mL to 5 L or 100 mL to 10 L) and be assured of a fresh uncontaminated mobile phase.

EPA 300.0, ASTM Method D-4327

Ion Chrom - Ion Singles as the Element

	Unit	100 µg/mL	Price	1000 µg/mL	Price
NO ₂ -N (Nitrite-Nitrogen) Water Matrix	100 mL	IC-NO2-N-1X-1		IC-NO2-N-10X-1	
	500 mL	IC-NO2-N-1X-5		IC-NO2-N-10X-5	
NO ₃ -N (Nitrate-Nitrogen) Water Matrix	100 mL	IC-NO3-N-1X-1		IC-NO3-N-10X-1	
	500 mL	IC-NO3-N-1X-5		IC-NO3-N-10X-5	
PO ₄ -P (Phosphate-Phosphorous) Water Matrix	100 mL	IC-PO4-P-1X-1		IC-PO4-P-10X-1	
	500 mL	IC-PO4-P-1X-5		IC-PO4-P-10X-5	
SO ₄ -S (Sulfate-Sulfur) Water Matrix	100 mL	IC-SO4-S-1X-1		IC-SO4-S-10X-1	
	500 mL	IC-SO4-S-1X-5		IC-SO4-S-10X-5	
NH ₄ -N (Ammonium-Nitrogen) Water Matrix	100 mL	IC-NH4-N-1X-1		IC-NH4-N-10X-1	
	500 mL	IC-NH4-N-1X-5		IC-NH4-N-10X-5	

Recommended product for EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography" and ASTM D-4327-91, "Test Method for Anions in Water by Chemically Suppressed Ion Chromatography."

Anion Singles Kits

IC-AN-KIT-R-10X-1	7 x 100 mL	IC-AN-KIT-R-10X-5	7 x 500 mL
Each at 1000 µg/mL		Each at 1000 µg/mL	
IC-F-10X-1	Fluoride	IC-F-10X-5	Fluoride
IC-Cl-10X-1	Chloride	IC-Cl-10X-5	Chloride
IC-NO2-N-10X-1	Nitrite-Nitrogen	IC-NO2-N-10X-5	Nitrite-Nitrogen
IC-NO3-N-10X-1	Nitrate-Nitrogen	IC-NO3-N-10X-5	Nitrate-Nitrogen
IC-BR-10X-1	Bromide	IC-BR-10X-5	Bromide
IC-PO4-P-10X-1	Phosphate-Phosphorous	IC-PO4-P-10X-5	Phosphate-Phosphorous
IC-SO4-S-10X-1	Sulfate-Sulfur	IC-SO4-S-10X-5	Sulfate-Sulfur

Anion Mix #14 Revised

IC-MAN-14-R2-SET	2 x 100 mL
IC-MAN-14-R2-1	100 mL
Water Matrix	6 comps.
F (Fluoride)	20 µg/mL
Cl (Chloride)	30 µg/mL
Br (Bromide)	100 µg/mL
N-NO ₃ (Nitrogen-Nitrate)	100 µg/mL
P-PO ₄ (Phosphorus-Phosphate)	150 µg/mL
SO ₄ (Sulfate)	150 µg/mL
IC-NO2-N-1X-1	100 mL
N-NO ₂ (Nitrogen-Nitrite)	100 µg/mL

Organic Acid Salt Standards

	Unit	100 µg/mL	Price	1000 µg/mL	Price
Formate Water Matrix	100 mL	IC-FORM-1X-1		IC-FORM-10X-1	
	500 mL	IC-FORM-1X-5		IC-FORM-10X-5	
Acetate Water Matrix	100 mL	IC-ACET-1X-1		IC-ACET-10X-1	
	500 mL	IC-ACET-1X-5		IC-ACET-10X-5	
Oxalate Water Matrix	100 mL	IC-OXAL-1X-1		IC-OXAL-10X-1	
	500 mL	IC-OXAL-1X-5		IC-OXAL-10X-5	
Chlorate Water Matrix	100 mL	IC-CHLR-1X-1		IC-CHLR-10X-1	
	500 mL	IC-CHLR-1X-5		IC-CHLR-10X-5	
Chromate Water Matrix	100 mL	IC-CHRM-1X-1		IC-CHRM-10X-1	
	500 mL	IC-CHRM-1X-5		IC-CHRM-10X-5	

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Quality Control Options

1. Gravimetric/Volumetric Certification: Each standard is measured gravimetrically and then QC'ed instrumentally (where available). Every component in the standard is guaranteed to be within $\pm 0.5\%$ of the requested value unless otherwise stated. The solutions are made up to volume using class A glassware. A certificate comes with each standard and documents the gravimetric values used.
2. Quantitative Validation: Full QA/QC method includes extended GC analysis using both internal and calibration standards plus statistical analysis. A data package is provided containing analytical and gravimetric data (Organic customs only).

Also available: OEM Standards - Privately labeled standards manufactured and tested to your specifications.

Techlab - Matériaux de référence certifiés et Equipements de laboratoire - www.techlab.fr

AA-52W-10X- 20ML :75	AA11N-10X- 20ML :73	AA19N-5 :73	20ML :74	AA37N-5 :74
AA01H-1 :73	AA11N-25X- 20ML :73	AA20N-1 :73	AA29N-25X- 20ML :74	AA38W-1 :74
AA01H-5 :73	AA11N-5 :73	AA20N-10X- 20ML :73	AA29N-5 :74	AA38W-10X- 20ML :74
AA01N-10X- 20ML :73	AA12N-1 :73	AA20N-5 :73	AA30H-1 :74	AA38W-25X- 20ML :74
AA01N-25X- 20ML :73	AA12N-10X- 20ML :73	AA21W-1 :73	AA30H-5 :74	AA38W-5 :74
AA02H-1 :73	AA12N-25X- 20ML :73	AA21W-10X- 20ML :73	AA30N-10X- 20ML :74	AA40H-1 :74
AA02H-5 :73	AA12N-5 :73	AA21W-5 :73	AA30N-25X- 20ML :74	AA40H-10X- 20ML :74
AA02W-10X- 20ML :73	AA13H-1 :73	AA22H-1 :73	AA31N-1 :74	AA40H-25X- 20ML :74
AA03N-10X- 20ML :73	AA13H-5 :73	AA22H-10X- 20ML :73	AA31N-10X- 20ML :74	AA40H-5 :74
AA03N-25X- 20ML :73	AA13N-10X- 20ML :73	AA22H-25X- 20ML :73	AA31N-25X- 20ML :74	AA41W-1 :74
AA03S-1 :73	AA13N-25X- 20ML :73	AA22H-5 :73	AA31N-5 :74	AA41W-10X- 20ML :74
AA03S-5 :73	AA14H-1 :73	AA23N-1 :74	AA32H-1 :74	AA41W-5 :74
AA04H-1 :73	AA14H-5 :73	AA23N-10X- 20ML :74	AA32H-5 :74	AA42H-1 :74
AA04H-5 :73	AA14N-10X- 20ML :73	AA23N-25X- 20ML :74	AA32N-10X- 20ML :74	AA42H-10X- 20ML :74
AA04N-10X- 20ML :73	AA14N-25X- 20ML :73	AA23N-5 :74	AA32N-25X- 20ML :74	AA42H-25X- 20ML :74
AA04N-25X- 20ML :73	AA15N-1 :73	AA24N-1 :74	AA33H-1 :74	AA42H-5 :74
AA05N-1 :73	AA15N-10X- 20ML :73	AA24N-10X- 20ML :74	AA33H-5 :74	AA43H-1 :74
AA05N-10X- 20ML :73	AA15N-25X- 20ML :73	AA24N-25X- 20ML :74	AA33N-10X- 20ML :74	AA43H-5 :74
AA05N-5 :73	AA15N-5 :73	AA24N-5 :74	AA33N-25X- 20ML :74	AA43N-10X- 20ML :74
AA06N-1 :73	AA16N-1 :73	AA25N-1 :74	AA34N-1 :74	AA43N-25X- 20ML :74
AA06N-10X- 20ML :73	AA16N-10X- 20ML :73	AA25N-10X- 20ML :74	AA34N-10X- 20ML :74	AA44N-1 :74
AA06N-25X- 20ML :73	AA16N-10X- 20ML :73	AA25N-25X- 20ML :74	AA34N-25X- 20ML :74	AA44N-10X- 20ML :74
AA06N-5 :73	AA16N-25X- 20ML :73	AA25N-5 :74	AA34N-25X- 20ML :74	AA44N-25X- 20ML :74
AA07W-1 :73	AA16N-5 :73	AA26H-1 :74	AA34N-5 :74	AA44N-5 :74
AA07W-10X- 20ML :73	AA17N-1 :73	AA26H-10X- 20ML :74	AA35W-1 :74	AA45W-1 :74
AA07W-5 :73	AA17N-10X- 20ML :73	AA26H-5 :74	AA35W-10X- 20ML :74	AA45W-10X- 20ML :74
AA08H-1 :73	AA17N-25X- 20ML :73	AA27H-1 :74	AA35W-25X- 20ML :74	AA45W-25X- 20ML :74
AA08H-5 :73	AA18N-1 :73	AA27H-5 :74	AA35W-5 :74	AA45W-5 :74
AA08N-10X- 20ML :73	AA18N-10X- 20ML :73	AA27N-10X- 20ML :74	AA36N-1 :74	AA46H-1 :74
AA08N-25X- 20ML :73	AA18N-25X- 20ML :73	AA27N-25X- 20ML :74	AA36N-10X- 20ML :74	AA46H-10X- 20ML :74
AA09H-1 :73	AA18N-5 :73	AA28N-1 :74	AA36N-25X- 20ML :74	AA46H-25X- 20ML :74
AA09H-5 :73	AA19N-1 :73	AA28N-10X- 20ML :74	AA36N-5 :74	AA46H-5 :74
AA09N-10X- 20ML :73	AA19N-10X- 20ML :73	AA28N-25X- 20ML :74	AA37N-1 :74	AA47N-1 :74
AA09N-25X- 20ML :73	AA19N-25X- 20ML :73	AA28N-5 :74	AA37N-10X- 20ML :74	AA47N-10X- 20ML :74
AA11N-1 :73	AA19N-5 :73	AA29N-1 :74	AA37N-25X- 20ML :74	AA47N-25X- 20ML :74